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ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
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Telephone Douglas 2537

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIAL NOTES.

SPECIAL NOTICE!

In the advertising pages, in this issue, will be found some special notices of importance to all members. These refer to the Register and Directory, now in process of compilation, and to the changes in the matter of the payment of dues, the status of a member in regard to medical defense, etc.

It may be here announced that the proposition to increase the assessment for 1912 by \$1.00, for the purpose of prosecuting illegal practitioners, was not approved by the county societies and consequently there is no additional assessment.

There is much wisdom, philosophy and innate honesty in children; it is as we grow up that we mask our real natures and cultivate "policy" and dissimulation. So too there is much of truth in the sayings of children. "Sticks and stones may break my bones, but words can never hurt me" contains in it more true philosophy than many chapters in many books. Some friends and some other friends (?) of your JOURNAL and its editor are much exercised because no attention has ever been paid to the many abusive attacks upon us that have appeared from time to time during the whole period of our existence as a publication. Filthy, abusive personalities are not argument. Comment that is obviously paid for by the dirty dollars of dirty and dishonest nostrum manufacturers, hurts nobody

save him who utters it or him who takes it seriously. There is nothing elevating in replying to attacks that are dishonest in origin and merely vile and abusive in their nature. Life is too short to waste any of it in thus sacrificing one's self-respect. Honest criticism, an honest fight, will always be welcome; personal abuse, perverted and dishonest attacks, will always be ignored—as they have been.

A gem of thought that is far too good to be wasted in a "six-point foot note" even in so estimable a publication as the *Boston Medical and Surgical Journal*, is the following paragraph which Dr. W. T. Councilman

appends to an address on "Experiences of a Medical Teacher" in the issue for June 27th. Speaking of optimism, he says:

"On critically reading this, the writer feels that some further elucidation is necessary. Of course, it is possible for a man to create about himself a fool's paradise in which he may dwell in happy contentment. He can quickly create such an environment by well-selected stages of alcoholic intoxication. The great trouble comes with the voluntary selection of optimism as a career. To most men, evil becomes deterrent by its exhibition in others. Thus, to the pure in heart, vice by demonstration is made abhorrent; to earnest, sober men, drunkenness is unattractive, and an agent at times so useful as is alcohol may be totally condemned. Although some may temporarily cover themselves with a cloak of optimism, using it as the wolf used the sheep skin, the only genuine and constant optimists are the beneficiaries of a protective tariff, syphilitics in the early stages of general paralysis, some successful clinicians, who turn to financial use their God-given intuitions of disease, and some presidents of colleges. The revelations of optimism which one gains from these sources makes the state of mind seem unattractive. But on the other hand if the world as seen seems good don't change your glasses."

The annual meeting of the American Medical Association at Atlantic City was a distinct success. The attendance was very good—within a small number of THE A. M. A. reaching the high water mark for MEETING. Atlantic City meetings. A very large amount of work was done by the House of Delegates, but probably the most important single action taken was the decision to call a meeting of the Secretaries of all State Medical organizations to be held in Chicago this Fall, for the purpose of securing some more generally similar and satisfactory method of regulating membership. The President, in his address to the House of Delegates, made some recommendations that would have been far reaching and disastrous had they

been carried out. But the House of Delegates wisely rejected these, and perhaps the most charitable thing to do is to make no further comment. Minneapolis is to be the place of the next meeting, the exact date not having as yet been determined. The officers elected are as follows:

President-Elect, Dr. John A. Witherspoon, Nashville, Tenn.; First Vice-President, Dr. Philander A. Harris, Paterson, N. J.; Second Vice-President, Dr. John L. Heffron, Syracuse, N. Y.; Third Vice-President, Dr. H. H. McClanahan, Omaha, Neb.; Fourth Vice-President, Dr. Henry D. Fry, Washington, D. C.; Secretary, Dr. Alexander R. Craig, Chicago; Treasurer, Dr. William Allen Pusey, Chicago; Trustees, Dr. M. L. Harris, Chicago; Dr. C. A. Daugherty, South Bend, Ind.; Dr. W. T. Councilman, Boston; Member of the Judicial Council, Dr. George W. Guthrie, Wilkes-Barre, Pa.; Member of Council on Health and Public Instruction, Dr. Walter B. Cannon, Boston; Members of Council on Medical Education, Dr. James W. Holland, Philadelphia; Dr. W. D. Haggard, Nashville, Tenn.

There seems to be some slight misunderstanding in regard to the giving of free treatment for rabies and for that reason the following official statement is published:

FREE TREATMENT FOR RABIES.

"You are correct in your understanding regarding the persons who are given Pasteur treatment by the state. The Board of Health furnishes treatment at the State Hygienic Laboratory and its branches to those persons who need it and are unable to purchase it from their private physicians. Persons desiring the treatment must apply to the local health officers, who in turn are expected to telegraph to the Secretary of the State Board of Health, vouching for the suitability of the case, financially and otherwise, for free treatment. The State Hygienic Laboratory makes no charge for the treatments of those persons who are accepted. In fact the laboratory receives no money except through its appropriation. It will be of benefit to us, as well as to the commercial houses of the state, if you will give the conditions under which treatment is obtained such publicity as you are able."

From Texas comes the kindly warning that a man by the name of J. B. Ruffo, claiming to be a physician, has victimized a number of persons in that state. He is supposed to be somewhere in Southern California; last heard of at San Diego. He tells quite a tale of woe and is a plausible and convincing talker. A number of photographs of the man have been sent to the office of the JOURNAL and if you think you have this gentleman in your community, write to the Secretary and he will forward a photograph.

The Hon. John D. Works (formerly referred to by the San Francisco *Examiner* as Judge "Spring Valley Water" Works), California's contribution to that awful and fearful body known as the United States Senate, delivered himself, on April 29th and 30th, of some more truly intelligent remarks. If the whole world could only have this grade of intelligence to guide it, it would be a much more amusing place than it is; something idiotic would be doing every moment! A goodly portion of the time of our excessively expensive Senate was taken up by this apparently semi-demented Works in the task of promoting eddyism and lying about the American Medical Association and the work of American physicians. It is doubtful whether any other document of similar size contains so many lies, so many half-truths cleverly distorted and so much absolute tommyrot as does the printed "Speech of Hon. John D. Works of California in the Senate of the United States." And of course this speech is printed in large quantities—by the Government—free of charge to Works. Equally of course, it is widely circulated by Works—at the expense of the Government. And then some people wonder why the Post Office does not pay and why it costs so much to run the country! Foolish questions!

Sometimes there is such a thing as too much of our old adage, "De mortuis nil nisi bonum."

This view seems to be shared with some editors of lay publications, for concerning the death of our late notorious citizen, "Dr." C. C. O'Donnell, the *Stockton Mail* has this to say:

WONDER OF WONDERS!

"The death of Dr. C. C. O'Donnell was noticed by some of the San Francisco newspapers with bashful coyness. One might have thought that a commonplace physician, no better and no worse than the ordinary run, had quit his pills and boluses to twang a harp on the other side of Jordan. As a matter of fact, the fellow was notorious. He ought to have died long ago. If the Devil isn't frying him on a particularly hot grid-iron right now, nobody is in any danger of being cooked for his sins in the next world. He certainly was a detestable character. But he was a steady advertiser."

Similarity of thought invaded the office of the *Fresno Mirror*, for about the same date we find this editorial comment:

"In the death of Dr. C. C. O'Donnell San Francisco loses a citizen it could have spared many years ago. Probably it would have been better if he had never been born at all. He was an ill-smelling joke as a politician and a disgrace to the medical profession. If he had had his deserts he would have died in jail."

Bernard Shaw, in his preface to "Three Plays by Brieux," has some most pertinent reflections. "Nothing that is admittedly and un-**SERIOUS** mistakably horrible matters very much, **HORRORS**, because it frightens people into seeking a remedy; the serious horrors are those which seem entirely respectable and normal to respectable and normal men." In April, a "floating palace" sank, drowning some 1,500 people, many of them wealthy and prominent. The disaster was "admittedly and unmistakably horrible" and the world gasped its horror. In March, there were 1,643 deaths from tuberculosis, in New York State, and there were reported 2,672 cases of "pulmonary or laryngeal tuberculosis." Tuberculosis seems to be still quite "respectable and normal" in spite of the fact that New York has had a good tuberculosis law since 1908. It would be sadly interesting to know how many women were subjected to serious operations due to pelvic gonorrheal infection innocently acquired, during the same period; doubtless the number would be shockingly large. And yet clean, innocent women are daily being married to infected men, often with the knowledge of their parents. It is within the personal knowledge of almost every physician of much experience, that "the wedding cannot be postponed" because of the "social scandal," even though the parents know the man has a venereal infection. But let us not speak openly of such things as sexual matters or venereal diseases; let us not permit such plays as Brieux's; to do so might wound the tender feelings of the "respectable and normal." These are certainly "serious horrors."

A REPLY.

In the June number of the *STATE JOURNAL* appeared an editorial* commenting upon the action of those physicians who had subscribed to a medical picture gallery with the provision that their own likenesses should be included in the exhibit. Substantially, this editorial comment contended that the egotism and vanity of some members of the medical fraternity had been capitalized by the promoters of a purely commercial enterprise, professional men of various shades and degrees of local prominence having agreed to part with \$150.00 or so for the privilege of seeing copper-plate portraits of themselves published with those of physicians and surgeons of national and international repute, a page of inspired and personally edited biography to accompany each picture.

I cannot spare the time to enter into a discussion with the writer of that editorial, but I wish to point out that both his antiquated view-point as well as the labored rhetoric in which he clothes his misconceptions afford ample evidence that he is out of sympathy with the progressive spirit of the times and is in all probability a member of that

venerable group of "elder statesmen" who are fast ceasing to be a factor in the conduct of matters medical in this State. I will take time, however, to protest against the imputation direct or implied in his remarks. In disagreement I insist that the action of those physicians who have subscribed to this project bespeaks an honorable ambition.

The proposition is that in return for our subscription we shall receive two books, each of fifty engravings and memoirs, each book to contain beside our own the pictures of whatever distinguished colleagues we may personally select from the lists submitted to us by the company. It is contended that others beside the "most eminent" men in our profession have been approached. In so large an undertaking mistakes, errors of judgment, are bound to creep in. I am sure, however, that no one will regret them more than the company. The agent gave me his personal assurance that he had been supplied with the names of only the most eminent men in the district allotted to him. And even if the names of some men of lesser eminence do creep in, of what harm is it? We do not have to include them in *our* editions of the work.

Perhaps its greatest beauty is that we can select our associates, so to speak, picking out the great men with whose portraits our own shall appear. Among them will be those of some of our friends and for the rest, if they are not our friends at least we are theirs. Why, you may ask, have at all albums of the photographs of men who wouldn't remember you if they saw you? If that be so, which I most seriously question, *their* memories are at fault, not ours. Why, in Heaven's name, shouldn't our pictures appear with theirs? The editorial in question implies that the only reason for our appearing with them is a financial one. It would be a dereliction of professional dignity to reply to this innuendo, but if it could be true, would it not be worth \$150.00 to see them there anyhow? I think it would.

There is another and practical side to this question. A side which the antique writer of this editorial overlooked. The two volumes de luxe which the company obligates itself to deliver to us are of a size and shape ideally adapted to a waiting-room table. It is easy to imagine the gratification of a patient who, upon picking up such a book, finds therein the photograph of the doctor she is visiting supported on the one hand for example by the portrait of Sir William Osler and on the other by that of Dr. Simon Flexner. For their own sake, as well as for ours, we have to maintain the confidence in us of our patients and what more convincing evidence of her wisdom in selecting her doctor could such a patient have than is afforded by these volumes? Would she not feel that she need "seek no further, for better can't be found?" We think she would.

To put it another way we think that these volumes enable us to meet the needs expressed by the dolorous poet who transformed Burns' lines beginning "A wad some Power the giftie gie

* "Some men are born great, etc." Page 221.

us, To see oursels as ithers see us" till it read "O wad that some Power some fairies or elves Would make ithers see us as we see ourselves."

S. N. I.

PONTIFICAL AIRS, FORSOOTH!

It is a long time since that spirit became extinct in the medical profession which prompted a physician to declare that he would rather err with Galen than accept the truth from Harvey. Yet to read some of the comments called forth by the libel action of Dr. Robert Bell against Dr. E. F. Bashford and the British Medical Association one might suppose that the physicians and surgeons of the present day ply their calling in measureless content with their achievements, and that they visit with the contumely of the self-sufficient any one who presumed to conduct them by his researches to truer views and better treatment of disease.

Dr. Bashford is General Superintendent of Research under the Imperial Cancer Research Fund. Dr. Bell is a legally qualified practitioner who, as stated by his counsel, was at one time Senior Physician to the Women's Hospital at Glasgow; having often operated for cancer and having invariably failed to cure by his operations he decided in 1894, "after years of experience," never to use the knife again. In place thereof he treats cancer by dietetic and hygienic measures, asserting in his publications that he can thereby cure it and easily prevent it. He has a theory that cancer is a blood disease and professes to be able to detect its presence in the blood by a microscopic examination. When these pretensions were censured by Dr. Bashford in an article in the British Medical Journal entitled "Cancer, Credulity and Quackery" Dr. Bell, feeling aggrieved at being "grouped with persons who were selling medicines and quack remedies of all kinds," charged Dr. Bashford with having libeled him, and the trial of the case before the Lord Chief Justice of England and a special jury resulted in a verdict for the plaintiff, with an award of two thousand pounds damages. It was not denied by their counsel that the defendants had called Dr. Bell a quack, in effect if not in so many words, so that the question for the jury was whether he is a quack or not, and deciding that he is not they marked their sense of the injustice of the charge by very heavy damages.

If a quack is, as the dictionary defines it, one who pretends to skill or knowledge which he does not possess, Dr. Bell is a quack, although perhaps of a mitigated variety. Unanimously medical men of wide experience and unimpeachable integrity—and men of this description testified to that effect at the trial—declare that cancer cannot be prevented or cured by such means as Dr. Bell employs. While admitting with due humility that surgery is inadequate to cope with the disease and offers but slight chances for a cure they deny that at present any other treatment offers any chance at all, and warn the sufferer from cancer who hearkens to the pretensions of Dr. Bell that

he risks his only opportunity. Strange to say, the result of this action was to make Dr. Bell appear to judge, jury, press and public as a martyr to the cause of research, as a representative of "honest orthodoxy" (to use the expression of one newspaper), as one who, in the legitimate pursuit of knowledge, has incurred the hostility of a majority insisting dogmatically on the acceptance of prevailing views. We are informed that the verdict was received with applause in court. The Lord Chief Justice remarked: "It would be a lamentable thing if any attempt or research to find a cure for this scourge should be checked by unjust criticism and comment." And the London "Times" in an editorial assures the medical profession that public sympathy is with Dr. Bell and taxes them with "too great a tendency to assume pontifical airs."

Needless to remark, these words imply a prodigious misconception of the spirit which impels medical investigators and the medical press to expose those whose boasts of therapeutic powers, whether prompted by vanity or rapacity, divert their victims from what *may* benefit them to what cannot possibly do so. These words reveal a distrust of properly constituted medical authority, which cannot fail to be obstructive to beneficent medical legislation and to influence altogether for the worse the relations between the profession and the public. It is incomprehensible why the Lord Chief Justice should see "unjust criticism and comment" in a protest against a menace to the public welfare. Probably a cancer on his judicial person would cause his Lordship to reverse himself.

SEX IN RELATION TO SOCIETY.*

Some few years ago Milliken ended an editorial wail of several hundred words with this last sigh: "But then, how few people ever really think!" For so many centuries the human mind has been cramped and restricted within the narrow limitations of the laws and "social customs" born of the innumerable man-made religions, that truly very few ever think. Of real thinkers, when one comes to a consideration of the problems presented in the title of the present work, three names present themselves: J. G. Frazer, Havelock Ellis and Forel. This is the last of a series of six volumes by Ellis and it contains the sanest, clearest and keenest presentation of facts and deductions therefrom that has been put into type. There is no rant; there is freedom of thought unrestricted by unscientific considerations of extraneous matters; there is a calm, judicial weighing of each problem presented; and the problems are huge. The Function of Chastity; The Problem of Sexual Abstinence; Prostitution; The Conquest of the Venereal Diseases; Sexual Morality; Marriage; The Art of Love; Science of Procreation; are these not indeed problems? Shall women forever pay with their lives for their ignorance of venereal diseases and for the silly

* Studies in the Psychology of Sex. Vol. VI. Sex in Relation to Society. By Havelock Ellis. Philadelphia, F. A. Davis Company. 642 pages. \$3.00.

"social" injunction that these things may not be discussed? Will the woman who sells her body in a loathsome marriage forever be held "respectable" and the woman who gives herself in a pure love and affection forever be outcast? Will people ever free their minds and begin to think? One can but wonder.

In the chapter on Sexual Abstinence there is an enormous amount of food for thought, for any one who will let himself think. "We ought to say, Rohleder believes, 'Permanent abstinence is unnatural and has never existed.' . . . If indeed we were to eliminate what is commonly regarded as the religious and moral aspect of the matter—an aspect, be it remembered, which has no bearing on the essential natural facts of the question—we cannot fail to perceive that these ostentatious differences of conviction would be reduced within very narrow and trifling limits."

Lest Ellis be regarded as "socialistic" (Heaven save the mark!), weigh carefully this excerpt from the same chapter:

"It seems to me that there should be no doubt whatever as to the correct professional attitude of the physician in relation to this question of advice concerning sexual intercourse. The physician is never entitled to advise his patient to adopt sexual intercourse outside marriage nor any method of relief which is commonly regarded as illegitimate. It is said that the physician has nothing to do with considerations of conventional morality. . . . But, after all, even if that be admitted, . . . In giving such a prescription the physician has in fact not the slightest knowledge of what he may be prescribing. He may be giving his patient a venereal disease; he may be giving the anxieties and responsibilities of an illegitimate child; the prescriber is quite in the dark."

And, if you really want something to think hard about, consider this:

"It has been necessary to treat seriously this problem of 'sexual abstinence' because we have behind us the traditions of two thousand years based on certain ideals of sexual law and sexual license, together with the long effort to build up practices more or less conditioned by those ideals. We cannot immediately escape from these traditions even when we question their validity for ourselves. We have not only to recognize their existence, but also to accept the fact that for some time to come they must still to a considerable extent control the thoughts and even in some degree the actions of existing communities.

"It is undoubtedly deplorable. It involves the introduction of an artificiality into a real natural order. Love is real and positive; chastity is real and positive. But sexual abstinence is unreal and negative, in the strict sense perhaps impossible. The underlying feelings of all those who have emphasized its importance is that a physiological process can be good or bad according as it is or is not carried out under certain arbitrary external conditions, which render it licit or illicit. An act of sexual intercourse under the name 'marriage' is beneficial; the very same act, under the name of

'incontinence,' is pernicious. No physiological process, and still less any spiritual process, can bear such restriction. It is as much as to say that a meal becomes good or bad, digestible or indigestible, according as a grace is or is not pronounced before eating it."

For those who wish really to think about the truth and to study human problems rather than to swallow delusional and hysterical personal opinions, this book of Havelock Ellis' will be indeed a treasure. But probably there are many who will be scandalized that anyone should have such "ideas;" verily, they know not truth.

COUNCIL MEETING, MAY 17th, 1912.

A joint meeting of the Council of the State Society and of the Committee on Public Policy and Legislation was held in San Francisco on May 17th, 1912, at noon. Of the Council there were present Drs. Kenyon, Ewer, Aiken, Edwards, Ryfkogel, Van Zwalenburg, Spencer and Parkinson; of the Committee there were present Drs. Bine, Carpenter and Barbat; there were also present the President, Dr. Hamlin, and the Secretary, Dr. Jones.

An application from the Pacific Wassermann Laboratories for advertising space in the JOURNAL was referred to the Council from the Publication Committee, which had rejected the advertisement. The Council, on motion, referred the matter back to the Publication Committee with the suggestion that the advertisement be accepted if the prices charged are not given in the advertisement and if it is stated that the advertisers are not practicing medicine.

In the matter of the Panama Pacific Exposition, on motion a committee of five was appointed to act with other similar committees and to confer with the directors of the exposition. The committee is to consist of the President, the Chairman of the Council and the Secretary of the Society, together with two additional members to be appointed by the respective presidents each year. The President, Dr. Hamlin, has appointed Dr. H. C. Moffitt and Dr. W. Jarvis Barlow to act on such committee.

The Chairman of the Committee on Public Policy and Legislation, Dr. Bine, brought up the various matters which had been referred to that committee by the House of Delegates, for discussion. They were discussed at considerable length, after which the Committee was, on motion, instructed to take steps to have the amendment to the medical law creating a state tax of two dollars (\$2.00) a year on all practicing physicians as proposed in the resolutions introduced into the House of Delegates by the Los Angeles Association (see minutes in June JOURNAL, page 228), adopted by the next legislature and to have this fund used in the most liberal manner possible for the protection of the public in the enforcement of the law regulating the practice of medicine in the State of California.

The Council then adjourned at the call of the Chairman.

ORIGINAL ARTICLES

RABIES, AND ITS PRESENT STATUS IN CALIFORNIA.*

By WILBUR A. SAWYER, M. D., Director of the Bureau of the Hygienic Laboratory of the California State Board of Health, Berkeley.

Efforts to check the spread of rabies, or hydrophobia, among the dogs of California are greatly hampered by the difficulty in obtaining authoritative statements of fact regarding the present situation. Many controversial articles and conflicting theories are being read and discussed, and it is no wonder that the public and, to a large extent, the medical profession of California are unaware of the true state of affairs. This article will attempt to present the facts needed by those who are trying to check the spread of the disease among dogs and to make its transmission to people impossible.

The early part of the present epizootic was reported by Black and Powers¹ in November, 1910, and the history of the disease up to April 1, 1911, was presented with the available statistics in an article published by myself² in July of that year. Since then the involved territory has been greatly enlarged and the most populous part of the state has been invaded. The center of maximum involvement has passed from Los Angeles to Fresno County and finally to San Francisco.

Figure 1 is a series of maps which shows at a glance how rapidly the disease has spread. The change in the shaded areas shows the increase in the number of counties involved, and the stippled counties represent an area invaded while the statistics here presented were being gathered together. It must be kept in mind that these maps, except some of the circles representing human deaths, are based on the results of laboratory examinations and not merely upon the interpretation of symptoms.

RESULTS OF LABORATORY EXAMINATIONS.

At the Hygienic Laboratory of the State Board of Health, in the year beginning April 1, 1911, and ending March 31, 1912, the heads or brains of 122 animals were received for examination. Five of the heads were in an advanced stage of decomposition and could not be examined. Sixteen gave negative results. Of the remaining 101 giving positive findings, 87 showed Negri bodies in the hippocampus or in other parts of the brain, and 14 others caused typical symptoms of rabies after inoculation into rabbits or guinea-pigs. The 101 positive cases were distributed among the different animals as follows: 2 men, 94 dogs, 2 cows, 1 horse, 1 cat and 1 ground-squirrel. Sixty-four people and seventy-eight dogs were reported as having been bitten by the animals which showed evidence of rabies on examination. As an indication of the increasing prevalence of the disease it will not be out of place to mention that in the two months following the period for which the statistics have just been given 55 examinations were made with positive results in 46 cases. The rapid increase of rabies is shown by the fact that 101 positive cases were examined in twelve months be-

fore April 1, 1912, and nearly half as many, 46, in the two following that date.

The specimens giving positive results during the year ending March 31, 1912, are divided between the counties as follows: Fresno, 29; Kings, 18; Tulare, 16; San Francisco, 12; Kern, 7; Merced, 4; San Bernardino, 3; Stanislaus, 3; Riverside, 2; Madera, 2; San Joaquin, 2; Imperial, 1; Contra Costa, 1; San Mateo, 1.

The number of positive examinations increased rapidly during the winter, which is our cool and wet season. This is sufficient answer to the very general superstition that the disease is caused by hot weather and to the claim frequently made that inability to get water is the cause of hydrophobia in dogs. By months the positive examinations are grouped as follows: in 1911, April, 3; May, 3; June, 4; July, 3; August, 5; September, 7; October, 10; November, 9; December, 9; in 1912, January, 15; February, 18; March, 15.

Many examinations for rabies have been made in municipal and private laboratories in California. Through the kindness of those in charge the results of these examinations have been obtained for publication and have been combined with the statistics of the State Hygienic Laboratory in the table below.

TABLE 1.
Results of Laboratory Examinations for Rabies,
April 1, 1911, to March 31, 1912.

| Name of Laboratory | Number of Examinations | Total Number Positive | Diagnosis from Negri Bodies | Diagnosis from Inoculation | Persons Reported Bitten by Positive Animals |
|---|------------------------|-----------------------|-----------------------------|----------------------------|---|
| State Hygienic Laboratory | 122 | 101 | 87 | 14 | 64 |
| Health Dept. of San Francisco | 70 | 49 | 47 | 2 | 48 |
| Health Dept. of Los Angeles | 29 | 18 | 18 | 0 | 29 |
| Health Dept. of Long Beach | 2 | 1 | 1 | 0 | 1 |
| Letterman General Hosp., San Francisco | 11 | 8 | 8 | 5 | 0 |
| Dr. W. Ophüls, San Francisco | 5 | 5 | 5 | 5 | 4 |
| Dr. H. Zinsser, Palo Alto | 3 | 1 | 1 | 1 | 0 |
| Dr. S. P. Black, Los Angeles | 18 | 18 | 18 | 0 | 29 |
| Dr. R. A. Archibald, Oakland | 21 | 8 | 8 | 1 | 0 |
| San Francisco Veterinary College | 143 | 46 | 46 | 0 | 5 |
| | 424 | 255 | 239 | 28 | 180 |
| Subtracted because examined in more than one laboratory | 5 | 5 | 5 | 5 | 0 |
| Corrected Total | 419 | 250 | 234 | 23 | 180 |

POSITIVE CASES BY COUNTIES.

| | |
|----------------|-----|
| San Francisco | 119 |
| Los Angeles | 30 |
| Fresno | 30 |
| Kings | 18 |
| Tulare | 16 |
| San Bernardino | 8 |
| Kern | 7 |
| Orange | 4 |
| Merced | 4 |

* Read before the Sacramento Society for Medical Improvement, June 18, 1912.

| | |
|--------------------|-----|
| Stanislaus | 3 |
| Ventura | 2 |
| Riverside | 2 |
| Madera | 2 |
| San Joaquin | 2 |
| Imperial | 1 |
| Contra Costa | 1 |
| San Mateo | 1 |
| <hr/> | |
| | 250 |

POSITIVE CASES BY ANIMALS.

| | |
|----------------|-----|
| Man | 2 |
| Dogs | 240 |
| Cats | 3 |
| Cows | 3 |
| Horse | 1 |
| Squirrel | 1 |
| <hr/> | |
| | 250 |

Those who claim that the disease will soon die out if unopposed will find food for thought in comparing the 250 cases of proved rabies of the year beginning April 1, 1911, with the 164 similar cases collected in my report of a year ago² for the seventeen months preceding. This gives a total of 414 positive cases examined in laboratories during the present epizootic.

DIAGNOSIS BASED ON SYMPTOMS ONLY.

There can be little doubt that the laboratory examinations represent but a small fraction of the total number of cases of rabies in the state. Unless persons or valuable animals have been bitten or unless the disease is new in a region, many animals die or are killed and buried without its being considered sufficiently important to warrant the trouble and expense of removing the heads, boxing and icing them, and shipping them by express to the laboratory. Diagnoses based on clinical symptoms are not apt to be reported to the State Veterinarian or the local health authorities unless the suspected animals have come under the observation of a veterinarian or physician who realized that the officials should be notified. Replies to a circular letter to the health officers of the southern two-thirds of the state did not show any territory to be involved except the counties already shown to be infected according to the laboratory records. The cases reported as being diagnosed as rabies from clinical symptoms alone are probably duplicated in the record kindly furnished by Dr. Keane, State Veterinarian. To his office between April 1, 1911, and March 31, 1912, 285 cases of rabies were reported. Of these, 120 were based on laboratory evidence and are probably included in the statistics already given. The remaining 165 are additional cases reported by veterinarians on the basis of clinical symptoms. These 165 cases came from territory shown on the maps in Figure 1 to be infected. They are divided among the various animals as follows: dogs 142, cows 12, hogs 6, horses 3, goat 1, mule 1.

RABIES IN MAN IN CALIFORNIA.

The mortality among human beings seems very small when comparison is made with the death rate

among dogs, which are the chief sufferers. Previous to April 1, 1911, five human deaths had been reported.² These are briefly reviewed below. The first of these preceded the summer of 1909, when the disease began to be prevalent.

1. A man, H. M. S., died with the symptoms of rabies in Pasadena on March 10, 1899, five weeks after being bitten in the face by his dog. Inoculation with brain tissue of the patient produced rabies in rabbits.³

2. M. E. C., a man, aged 30, died with the symptoms of rabies, in Holtville, Imperial County, on Dec. 12, 1909. He had been bitten by a cat.

3. J. S., a boy of 10 years, died with symptoms of rabies on February 21, 1910, in Los Angeles.⁴ He had been bitten in the leg by a stray dog. Negri bodies were found in his brain.

4. J. B., a man of 62, died of rabies at Rivera, Los Angeles County, as a result of being bitten in the face by his own dog.

5. E. L., a girl of six years, died of rabies on Dec. 2, 1910, in Los Angeles, seventeen days after being bitten in the lip and nose by a stray dog. Intensive Pasteur treatment was begun, but the unusually short incubation period did not permit its completion and therefore it did not have time to produce the immunity needed for protection. Negri bodies were demonstrated in the head of the dog and later in the brain of the girl. Inoculation with brain tissue of the girl produced rabies in a rabbit.⁵ This case was described in greater detail in my previous article on rabies in California.²

During the year for which the laboratory statistics are being given, April 1, 1911, to March 31, 1912, there have been six human deaths from rabies, bringing the total of reported cases up to eleven. That there were not more fatalities can only be accounted for by the large number of persons who availed themselves of the Pasteur treatment for the prevention of rabies. The remaining six cases are given below.

6. A girl of three years, M. L. C., developed the symptoms of hydrophobia (rabies) and died on June 27, 1911, near Tulare, Tulare County. The typical symptoms, including the spasms of the throat on attempting to swallow, were present and left no doubt as to the diagnosis. The source of the infection was not ascertained although careful inquiry was made by the attending physician, Dr. John B. Rosson, to whom we are indebted for our information.

7. A boy, aged 15, C. V. B., died of hydrophobia on August 27, 1911, in Los Angeles. From the report⁶ of this case published by Dr. W. V. Chalmers Francis, attending physician, and from information kindly furnished by him through correspondence, the following facts have been briefly gathered together:

About nine months before the boy's death his pet dog, as well as several other dogs in the neighborhood, had been bitten by a strange dog. One or two of the animals which had been bitten were later killed on the suspicion of having rabies. The boy's dog developed an acute illness, supposed at the time to be poisoning, and died five to seven

days after the first symptoms. Among the symptoms of the dog were rapid breathing, salivation and weakness of the hind legs. The boy took entire care of the sick animal. Whether the boy was actually bitten is not clearly remembered, but one of the boys in the family was bitten by the dog at about this time, and the boy who died had open wounds on his hands when he was caring for the animal. The boy was a strong healthy youth who attended school during the day and acted as life-saver and swimming expert at one of the public baths in the evening.

On August 22, he began to feel feverish. The next day he took to his bed and complained of stiffness in his legs. He had no appetite. The following night he was unable to sleep. On the third day, August 24, he disliked to drink on account of trouble with his throat. He dressed himself and walked stiffly. The following day he became much excited and easily angered. His flushed face wore an expression of fear and anxiety. He complained of slight pains in throat, chest, and abdomen and of difficulty in swallowing. He could not sleep. He answered questions rather clearly, but contradicted himself frequently. Occasionally he had outbursts of passion followed by expressions of regret and apology. He had fear that he would be forced to drink and he exclaimed that he would not drink because it choked him. Drafts of air precipitated spasms of the face so painful that when the door was opened, the patient screamed in terror.

Other prominent symptoms were loss of power in the legs, loss of the patellar reflex, irregular breathing, irregular and rapid heart action and elevation of temperature to 102° F. Sometimes the patient would not breathe during a period as long as forty seconds. During the remaining two days of life the patient had frequent convulsions and fits of anger. There were noisy delirium, delusions, hallucinations, and unreasoning fear. At times he became rational and complained of burning in his throat, but he would refuse angrily to try to drink. Toward the end he developed emphysema of his face, neck and chest. He died on the 27th of August, the sixth day of his illness.

An examination of his brain performed by Dr. Stanley P. Black, revealed the presence of Negri bodies, and confirmed the diagnosis based on symptoms.

8. A man of 30 years, W. L. L., died of rabies on September 1, 1911, in Los Angeles. We are indebted to his attending physician, Dr. H. A. Johnston of Anaheim, and to Dr. Anders Peterson of the Los Angeles County Hospital for the following information: On June 15, 1911, the man was bitten on the hand by his own pet dog. There were about four small deep wounds. These were cauterized with nitric acid. A veterinarian who examined the dog stated that he suspected rabies and advised observation of the animal. The owner killed the dog against this advice, thus destroying further evidence, and refused to take anti-rabic treatment.

On August 30, 1911, 59 days after he was bitten, the man began to feel sick and tired

and to yawn frequently. The following night severe symptoms began. He was taken to the Los Angeles County Hospital on August 31. When he arrived, he was semi-conscious and the spasms in his throat were so severe that he could not swallow or speak. He died on September 1, the third day of his illness.

9. A boy six years old, C. W. B., died of hydrophobia on February 15, 1912, in Santa Maria, Santa Barbara County. Dr. R. W. Brown of that city is to be thanked for furnishing us the important facts in the case.

On January 12, 1912, this little boy was playing in the road in the country near Santa Maria when a small black dog attacked him and bit him in the face and on the hand. The dog then went on its way and was not seen again. Four hours later the wounds were cauterized. On February 14th, one month after the biting, the boy was visited by Dr. Brown, who found his patient on the bed with an expression of extreme terror on his face. For four or five days the child had not been himself, being at first peevish and disinclined to play and later having spells of choking and of "seeing things" on the wall. During the doctor's visit the boy complained of thirst and asked for water, but, when given as little as a teaspoonful, he fell backward suffering agony from the spasm in his throat, and swallowing was impossible. Early the following morning the little fellow died.

10. A man of 21 years, F. A., died of hydrophobia on March 9, 1912, in San Francisco. Through the courtesy of Dr. F. R. Dray, attending physician, the following facts have been learned regarding this case. The young man was the owner of four dogs. One of these was bitten by a dog supposed to be "mad." The dog which was bitten developed rabies and bit one or more of the other three before it died. All four of the animals finally succumbed to the disease. While attempting to give the last of his dogs castor oil, the owner was bitten in the right thumb near the nail. This occurred on February 3, 1912, before the outbreak of rabies in San Francisco had received sufficient publicity to be generally recognized. The young man contented himself with cauterizing the wound with phenol two days after it had been inflicted.

On March 2, four weeks after the bite, he began to have pain in the right arm. Two days later he became very nervous and troubled and consulted a physician. He was unable to swallow some pills intended to quiet him. On the same day he was sent to the German Hospital. On admission he was unable to swallow liquids except with greatest difficulty. During the following night he was rational, but after that he had frequent periods of intense excitement, delirium, and convulsive twitching. He had hallucinations leading him to believe that there were various animals in his bed, and his face bore a peculiar drawn expression resembling a smile. Noises or contact precipitated attacks of twitching and rigidity of his muscles. There were no true convulsions. There was moderate fever. As he was unable to swallow,

nourishment was maintained by rectal feeding. I was invited to visit the patient on March 8th. The disease was far advanced and death was evidently not far away. The patient's face wore a markedly drawn and worried, or frightened expression and his open mouth was filled with foamy saliva. There was moderate cyanosis and the breathing was heavy. He was unable to articulate. The extremities were very weak and somewhat rigid. The patient died early on the morning of March 9th, eight days after he began to feel pain in his shoulder and six days after symptoms of nervousness began.

A post-mortem was performed and parts of the brain were sent to several laboratories for diagnosis. The results were uniformly positive for rabies. At the State Hygienic Laboratory, Negri bodies were demonstrated in the hippocampus. A rabbit and a guinea-pig were inoculated and both developed rabies. The guinea-pig showed symptoms of furious rabies for five days.

11. A man of 63 years, J. M., died of rabies on March 21, 1912, in San Francisco. On February 25th this man was bitten deeply in the left wrist and more superficially in the left foot by a dog on the streets of San Francisco. The wounds were cauterized half an hour afterward. The brain of the dog inflicting the wounds was examined at the laboratory of the San Francisco Health Department and was found to contain Negri bodies. After a delay of five days the patient came to the Laboratory of the Health Department on March 1, and was put under the Pasteur treatment with virus distributed through the State Hygienic Laboratory. On the 17th day of treatment, four days before the treatment would have been finished, the patient complained of pain in his arms and chest, but especially in his left shoulder. The location of the pain was probably due to the fact that the more serious wounds had been inflicted in the left wrist. He also complained of a general aching. The next day he took to his bed. His chief symptoms were loss of appetite, insomnia, nervousness, and pain in his left shoulder and chest. He had a mild fever reaching a maximum temperature of 99.2° F. The next day I had the privilege of seeing the patient. The symptoms were much as already described. The patient's mind was clear and he did not seem specially apprehensive. On the evening of the following day, March 20, more characteristic symptoms developed. There was difficulty in swallowing. The next morning he had convulsions and spasms. Chloroform was given for relief. The patient finally became comatose and died at noon, March 21, 1912. A portion of the brain was examined at the State Hygienic Laboratory and Negri bodies were found in the hippocampus. Animal inoculations were impossible as the specimen had been sterilized by embalming.

We are indebted to Dr. W. H. Kellogg of the San Francisco Health Department and Dr. Paul Castellhun, attending physician, for information regarding this case.

This is the second case in California where the

Pasteur treatment was begun but was unable to save the patient because the incubation period was much shorter than usual and not sufficient for the development of immunity.

COURSE OF THE DISEASE IN MAN.

The chief symptoms of rabies in human beings have most of them been depicted in the cases already described. In the majority of the people bitten by rabid animals the disease does not develop even without treatment, but all of the cases which advance to the point of showing symptoms are fatal in spite of any treatment as yet known. By taking an average of a large number of cases it has been found that about 15 per cent of untreated people, who have been bitten by rabid animals, develop the disease, while all but 1.3 per cent⁷ could have been saved by treatment. These figures are based only on cases of persons receiving significant bites from animals conclusively shown to be rabid. The mortality is highest from bites which are most severe and those inflicted nearest the central nervous system or large nerve trunks and from virus of special virulence for man, as, for example, the virus received from wolf bites. The wound inflicted by a rabid animal heals or fails to heal without being noticeably affected by the presence or absence of the virus. After an incubation period varying in man from 14 days to a year, or even longer, but in the great majority of cases lying between thirty and seventy days, symptoms make their appearance. There may be redness, pain, numbness, or itching at the wound or near it. Nervousness, irritability, and inability to sleep may be the only symptoms for a day or two. A moderate elevation of temperature is a fairly constant symptom. These earliest symptoms are usually followed within a day or two by marked nervous excitability and sensitiveness to external stimuli. A draft of air, a touch, or a noise may cause painful local spasms of the facial or other muscles, or general muscular spasms. Moderate difficulty in swallowing is followed, as the symptoms develop, by excruciating pain due to spasms of the throat brought on in greatest severity by any attempt to drink. The dread of these spasms will sometimes lead patients to scream at the sight of a glass of water or at the suggestion of drinking. These symptoms were early interpreted as fear of water and the disease was named hydrophobia. There are hallucinations and there may be violent fits of anger and even furious mania, but intervals usually occur in which the mind is clear. The breathing becomes irregular and the heart action is rapid. Finally paralysis becomes the predominant symptom and convulsive seizures, controllable only by general anesthetics, cease, and death ends the suffering. The course of the disease is usually between three and eight days from the first symptoms. The duration of the disease is shorter in the more severe form, known as the dumb or paralytic type, where the stage of excitement is not very marked, than in the furious type of the disease.

COURSE OF THE DISEASE IN THE DOG.

In dogs, as in man, the incubation period is long, varying from 8 days to one year, but seldom exceeding six months and usually lying between 15 and 60 days. As in man, about 15 per cent of the dogs bitten by rabid animals develop the disease. The symptoms in the dog resemble those of man in being chiefly the effects of greatly increased susceptibility of the nervous system to external stimuli. The first symptoms noticed are apt to be a change in behavior. The animal may be more affectionate than usual, but he is more apt to be morose and agitated. He tends to snap and bite, probably because of hallucinations. The voice is frequently changed. Soon difficulty in swallowing appears and paralysis of the jaws and hind legs is apparent.

Dogs fairly well advanced in the disease will frequently try to drink and they succeed in wetting their dry noses and tongues, but are usually entirely unable to swallow. The water runs back out of their open mouths. The paralysis gradually spreads to the whole body and the animal dies in a few days after the first symptom, usually in 4 or 5 days, possibly in 2 to 10 days. The symptoms of rabies vary greatly, and frequently some characteristic symptoms, such as the hanging of the jaw, may be absent.

The cases of rabies in dogs are arbitrarily divided into two merging types, furious and dumb rabies. This classification only serves to indicate whether the nervous symptoms show themselves chiefly in excitement and activity or in helplessness.

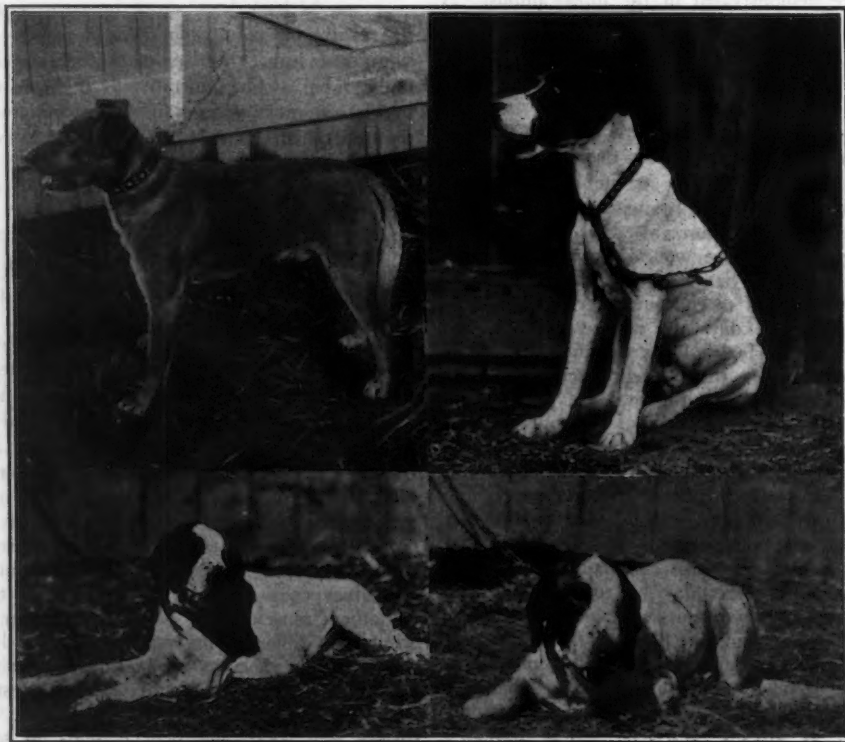


Fig. 2. Dogs showing symptoms of rabies.

The jaw is allowed to hang down and can be closed with difficulty, if at all. Figure 2 shows pictures of three dogs suffering from rabies.

They all show the dropping of the jaw, and some of the pictures suggest the muscular weakness, especially of the hind legs. The swollen dry tongue, the bleary eyes, and the emaciation cannot very well be made out in the pictures. The first in the series of four pictures shows a dog which came down with rabies at the Presidio of San Francisco, and I am indebted to Dr. John R. Barber for the opportunity of securing the photograph. The other three pictures were taken in Riverside and were kindly furnished by Dr. Geo. H. Tucker, Health Officer of Riverside County.

paralysis. The dumb form is as a rule the more severe and more rapidly fatal.

In the furious type the dog is apt to leave home and to travel long distances, running along aimlessly and attacking without warning animals or persons who may happen to be in his path. Such rabid animals usually look dirty and tired, and the beginning muscular weakness may show itself in a wavering gait. The dog may travel for many miles and for a couple of days before weakness brings it to the ground to die. Attempts to treat such dogs have resulted frequently in their biting the persons attempting to relieve their suffering.

As an example of the distances which rabid dogs

sometimes run, introducing their disease into new territory, the following case is of interest. A bull terrier left his home in San Francisco at 10 a. m. on April 21, 1912. No abnormality was noticed by his owners. The next day he killed and tore a dog and attacked a woman in Half Moon Bay, twenty-five miles or more from his home. The dog was shot and the head was sent to the State Hygienic Laboratory, where Negri bodies were demonstrated in the brain tissue.

CHARACTERISTICS OF THE DISEASE.

Rabies, or hydrophobia, is a specific infectious disease to which all warm blooded animals are susceptible. The disease can only be contracted through the introduction of virus from a previous case of rabies into a wound which enters or penetrates the skin and thus permits the infectious agent to come in contact with nerve filaments. The infectious agent, differing in this respect from other known causes of disease, spreads slowly up the nerves to the central nervous system, where it develops and produces characteristic symptoms leading in almost all cases, at least in all human cases and probably in all canine cases infected in the usual way, to death in from two to eight (or possibly ten) days.

The organism causing this disease has not been isolated, but many of its characteristics are known. It is small enough to pass through the coarser Berkefeld filters. Many consider the characteristic Negri bodies found in the brain tissue to be forms of the parasite and point to the evidence of internal structure shown by the grouping of the granules within these bodies.

The dog is the principal factor in the spread of rabies. Remlinger⁸ tells us that the dog transmits the disease to man in 93% of the human cases. The virus is present in the saliva and is introduced by the teeth in biting, although it may be introduced into existing wounds. The virus may be present in the saliva for two or three days before the onset of definite symptoms, as has been shown by the experiments of Roux and Nocard.

The most virulent tissues of a rabid animal are the brain and spinal cord. The peripheral nerves and several of the glandular structures (salivary glands, pancreas, lachrymal glands, suprarenal capsules, and rarely the mammary glands) are infectious, but other parts of the body do not contain the virus. Most of the period of incubation is taken up by the traveling of the virus along the nerves to the central nervous system and, as a result, the incubation period, when inoculation has been made into the extremities, is longer than when the virus has been introduced near the brain.

METHODS OF DIAGNOSIS.

The diagnosis of rabies in man or animals can usually be based, with a small percentage of error, on clinical symptoms alone when the disease has advanced to a point where marked symptoms are shown. After death, examination of the body does not reveal any gross changes sufficiently characteristic to warrant the making of a diagnosis. There is apt to be marked rigor mortis. In dogs the stomach frequently contains foreign bodies such

as grass, sticks, and stones, but this may occur in other diseases. The only conclusive post-mortem evidence is found through microscopic examination of nervous tissues. Important, chiefly as confirmatory evidence, are the multiplication of the cells of the endothelial capsule in certain of the nervous ganglia with more or less destruction of the ganglion cells. These lesions were described by Van Gehuchten and Nélis. Other changes of similar importance were described by Babès. They are the accumulations of newly formed cells around the ganglion cells in certain parts of the central nervous system.

Of far greater practical importance are certain small round or oval bodies which were discovered and described by Negri and bear his name. They are found chiefly and characteristically within the ganglion cells of the brain, but frequently are seen away from those cells. The finding of Negri bodies alone is considered by the highest authorities to be sufficient evidence on which to base the diagnosis of rabies. As a rule they are found most easily in the hippocampus but they can be discovered in other parts of the brain. The simplest way of demonstrating them, and the method used in most cases at the State Hygienic Laboratory, is to make, on glass coverslips, smears of gray matter

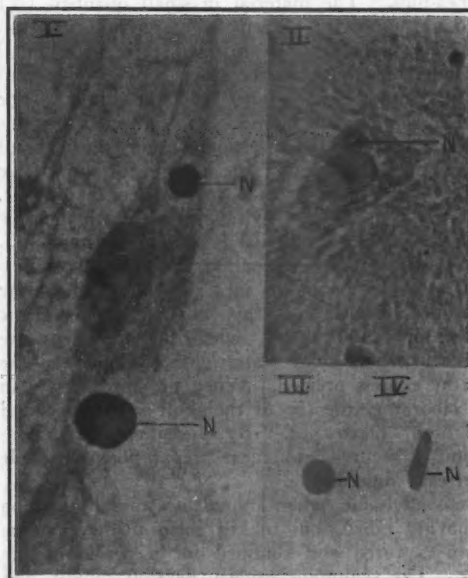


Fig. 3. Negri bodies (marked N) within ganglion cells and free. Magnification 800. Photomicrographs by Sawyer.

from the hippocampus, and to stain with methylene blue and fuchsin according to the method of Williams. The coverslips are then mounted in balsam and are carefully searched, for several hours if necessary. Figure 3 shows photomicrographs of preparations made in diagnostic work at the State Hygienic Laboratory.

In the first picture is a large ganglion cell from the hippocampus from a dog's head which was sent to the laboratory from San Francisco. In each

end of the cell is seen a large round body. These are Negri bodies and are an indication that rabies is present. As already stated, many suppose that the Negri bodies are the actual pathogenic organisms, but others consider them to be structures produced by the action of the toxin of rabies on tissue cells. The second picture is a photograph of a ganglion cell in a stained paraffin section from the hippocampus of one of the human cases which died in San Francisco. The Negri body is shown in the protoplasm close to the cell nucleus. The third and fourth pictures show free Negri bodies, one having the usual round shape and granules, which are indistinct in the picture, and the other having the more unusual oval shape.

Although Negri bodies, when found, are proof of the presence of rabies, failure to demonstrate them does not completely rule out the existence of the disease. The Negri bodies may be so few or so small, either because the animal was killed early in the disease or because of factors which we do not know, that their detection is not accomplished in several hours' search. In order to be able to make an absolute diagnosis, which in many cases is very important to persons who have been bitten or who own animals which have been bitten, it is necessary to inoculate brain tissue from the negative cases into laboratory animals, usually rabbits or guinea-pigs. The material in small quantity (0.1 to 0.2 c. c. of the suspension in physiological salt solution) can easily be injected through a small trephined opening into the space between the skull of the anesthetized animal and the brain. The animal should not be noticeably affected by this operation. If the brain tissue contains the virus of rabies, the animal will come down with the disease and exhibit symptoms in a varying length of time, usually 15 to 30 days in rabbits, although in some cases the incubation period is several months.

The laboratory examination for diagnosis is carried on at several points in California. The State Board of Health does this work at its Hygienic Laboratory in Berkeley, when the specimens are properly iced in some watertight container and are sent by express prepaid. When the head arrives in the laboratory the top of the skull is removed and the brain taken out. By dissection the hippocampus is secured and smear preparations are made as already described.

It is advisable, when animals are under suspicion of having rabies, not to kill them if they can be safely captured and confined for a period of ten days. The symptoms usually develop rapidly and are in most cases sufficiently characteristic to leave no doubt, and at least to enable a decision with regard to the advisability of Pasteur treatment for any persons bitten. A decisive diagnosis is also important so that dogs which were bitten by the suspected animal can be killed in order to prevent their developing the disease later and spreading it further. If the animal dies, the laboratory examination is apt to be more conclusive than when it is killed early in the disease.

TREATMENT OF RABIES.

When the symptoms of rabies have once made their appearance, the disease cannot be checked and

treatment is of no avail except for the amelioration of suffering. The agony of the few days of intense suffering can be lessened by careful protection of the patient from noises and drafts and, in the early stages of the disease, by the administration of sedatives, but when the agonizing spasms are frequent and severe it is only humane to bring about relaxation and unconsciousness by means of ether or chloroform.

In the absence of a cure for rabies, the preventive treatment becomes very important. Cauterization of the wound has been found through long experience to diminish the chances of development of the disease, and this has been confirmed by experiment. The most practical and efficient method of cauterization is the application of concentrated nitric acid to the wound with a small stick or swab, as soon as possible after the biting. If the wounds are very large, as in the case of severe lacerations of the face, cauterization may be unwise and it may be necessary to depend on careful washing with bland sterile solutions and the intensive Pasteur treatment.

No method of cauterization saves a large enough percentage of cases to warrant the neglect of further preventive treatment. Fortunately, an efficient method of immunization was found for us by Pasteur. Soon after Pasteur began his studies on rabies he discovered that the virus was located chiefly in the central nervous system, and, after failing to grow the microorganism of rabies on artificial culture media, he conceived the idea that it could be grown in pure culture in the living animal. He therefore inoculated the brains of rabbits with brain tissue from rabid animals and kept his culture alive by transplanting it from rabbit to rabbit. The virulence for rabbits increased rapidly with these serial passages until the incubation period in rabbits became as short as six or seven days. Then no further change in virulence was apparent on further transplantation and the virus was known as fixed virus for rabbits, in contrast to the virus found in nature and called street virus. In several infectious diseases, for example, anthrax and chicken cholera, Pasteur had been able to produce immunity in animals by treating them with cultures of the infectious agent after the microorganism had been rendered less virulent by being grown on artificial media under unfavorable circumstances. Pasteur took the pure culture which he had produced for rabies, i. e., the spinal cords of rabbits which had just died of rabies, and attempted to render it less virulent in various ways, finally adopting as most practical a method of drying the cords in glass bottles over sticks of potassium hydroxide. After a cord has been dried in this way for eight days, it is no longer able to produce the disease, even in rabbits, which are specially susceptible to the fixed virus. Inoculation with such cords gives no symptoms but makes the person or animal inoculated resistant to a stronger virus, i. e., a cord which has dried a shorter time. By gradually increasing the strengths of the attenuated virus injected under the skin a considerable degree of immunity can be developed in an animal or person in from

eighteen to twenty-one days. This immunity continues to increase after treatment and as a rule reaches a high level fifteen days after the end of treatment. In order, therefore, to give the highest protection, the Pasteur treatment must be begun about thirty-six days before symptoms would develop; if that can be done, the treatment is practically certain. But as incubation periods shorter than 36 days are not very rare, the importance of losing no time between being bitten by a rabid animal and receiving treatment is apparent, although very few persons develop rabies if they have had time to finish the 21 days of treatment.

The duration of decided immunity after the Pasteur treatment probably averages about two years. Experiments on dogs have shown that 33% of them are immune after two years. Remlinger⁸ concludes that persons who have taken the Pasteur treatment and are bitten more than one and one-half years later should again be immunized. He cites a case of death from rabies in a man who was bitten by a rabid dog four years after he had taken the Pasteur treatment.

Calmette has made a valuable addition to the Pasteur method. He introduced the keeping of antirabic virus in pure, sterile glycerin, thus making it possible to use fewer rabbits than before in manufacturing virus and to have nevertheless a sufficient amount on hand for emergencies. In glycerin the unground virus will remain practically unchanged in virulence for a month.

There are a number of radical modifications of the Pasteur method in use. Perhaps the most important of these is the method of Högyes who, instead of using virus attenuated by drying, dilutes fixed virus and begins treatment with extremely small doses, increasing them gradually. This method has been found to produce results almost identical with those of the classical Pasteur method. Other deviations from the usual methods differ chiefly in the way in which the cords are attenuated.

Much hope for a cure for rabies has been placed in the fact that the serum of animals immunized by the Pasteur treatment, especially when it is followed by injections of virus of full strength, has considerable power of destroying the virulence of fixed virus. Unfortunately the most potent serum yet tried has been unable to cure rabies and its best use at present is in the serum-virus mixture of Marie. He mixes fixed virus with not quite enough immune serum to neutralize it. A dose of this mixture immunizes patients more rapidly than the usual Pasteur treatment. Marie⁹ has used this mixture during the first three days of the Pasteur treatment in the more severe cases under his care. In this way, he has shortened the course of treatment by five days, and has probably saved lives by hastening full immunity. Serum alone has failed to immunize or cure, and in the serum-virus method it acts probably chiefly by attenuating the fixed virus.

The Pasteur method, according to Remlinger⁸ had been applied before 1907 to 131,579 cases with only 549 deaths occurring more than 15 days after

the end of treatment. This indicates that the true failures were 41 hundredths of one per cent. of the total number of treatments. When it is considered that approximately fifteen per cent. of all untreated persons who are bitten by dogs known to be rabid, develop the disease, it is apparent, even when liberal allowance is made for the number of persons who take treatment without definite proof that the biting animal was rabid and also for the few persons dying during treatment or within fifteen days of the end of treatment, that many thousands of people have already been saved.

With these figures in mind, it would be surprising if any one bitten by a rabid animal failed to report for treatment. There is no question that all persons bitten far enough into the skin to draw blood should take Pasteur treatment. When the saliva of rabid animals has entered fresh wounds, treatment should be taken. If small, partially healed wounds of several days standing are wet with the virus of rabies the question of treatment is not so easily settled, for Babès and Vasiliu¹⁰ have shown by experiment that such wounds cannot be easily infected. When there is serious doubt, treatment should be advised.

PASTEUR TREATMENT IN CALIFORNIA.

The accepted methods of preventing dogs from spreading rabies, although proven by experience to be efficient, have not been applied with sufficient thoroughness to give the people of California the protection they need and should demand. As a result, it has been necessary for many persons, who have been bitten by animals which were either proved to be rabid or strongly suspected, to undergo the Pasteur treatment. The treatment usually involves an expense of about a hundred dollars, when obtained privately, and, when the patient cannot afford to pay for treatment, he is subjected to the expense of traveling to a branch of the State Hygienic Laboratory as well as the loss of time and cost of board during the three weeks of treatment. The economic loss due to rabies is therefore far in excess of the value of the cattle, horses, and dogs which die from the disease. In my previous article,² I collected the following statistics regarding Pasteur treatment in California from the entrance of rabies into California to March 31, 1911. One hundred and forty-one treatments were sent to California by the government and at least 20 came from other sources. Definite information was obtained regarding the administration of 125 treatments, 105 with government virus. One patient in the series died of rabies because the incubation period was so short that the treatment with government virus could not be completed. One patient showed a slight transient paralysis. With these exceptions the treatments were successful and free from complications.

During the period for which we are reporting in detail in this article (April 1, 1911, to March 31, 1912,) many Pasteur treatments have been given in the state. After September 1, 1911, all government virus sent to California for administration by the State Board of Health was ad-

ministered by the State Hygienic Laboratory and its branches. Therefore the statistics of the laboratory regarding Pasteur treatment begin with that date. Except for emergency purchases of parts of a few treatments, all virus used by the State Hygienic Laboratory came from the government. The chief facts regarding Pasteur treatments at the State Hygienic Laboratory during the year under consideration are given below.

TABLE 2.
PASTEUR TREATMENTS BY THE STATE
HYGIENIC LABORATORY.

Sept. 1, 1911, to March 31, 1912.

| Where and by Whom Administered | No. of Cases..... | Treatments Completed | Deaths | Diagnosis in Biting Animals Based on | | |
|---|-------------------|----------------------------|--------------|--------------------------------------|-------------------------|--------------------------|
| | | | | Negri Bodies or Inoculation... | Observed Symptoms | Suspicious History |
| Southern Branch, Los Angeles..... | 5 | 4 | 0 | 5 | 0 | 0 |
| San Joaquin Valley Branch, Fresno.. | 6 | 6 | 0 | 6 | 0 | 0 |
| City Health Dept., San Francisco... | 22 | 16 | 1 | 18 | 1 | 3 |
| City Health Dept., Los Angeles..... | 2 | 1 | 0 | 2 | 0 | 0 |
| Letterman Gen'l Hosp., Presidio, S. F. | 4 | 4 | 0 | 3 | 0 | 1 |
| Total | 39 | 31 | 1 | 34 | 1 | 4 |

The 39 cases came for treatment from the several counties as follows: San Francisco, 26; Los Angeles, 5; Tulare, 2; Fresno, 2; Orange, 1; Kern, 1; Ventura, 1; and Merced, 1.

The infection came from the bites of dogs in 35 instances, and in two cases from the bites of cats. The two remaining cases were inoculated with virus from a human case. In one instance the nurse attending this case of rabies accidentally injured his thumb while it was covered with the patient's saliva, and in the other instance the inoculation happened through an accident in one of the laboratories which examined the patient's brain after death. The one fatal case developed symptoms before the treatment was completed. There were no complications in any of the cases, except an abscess at the site of inoculation in one instance. This was not serious beyond the temporary inconvenience. A certain amount of local reaction usually occurs at some time during the treatment and most of it is probably due to anaphylaxis. In our experience this reaction has been most marked between the 7th and 11th days of treatment. There may be malaise and slight elevation of temperature for a day or two when the local redness and soreness is at its height.

The time between the infliction of the bite and the beginning of treatment averaged 7.1 days. The longest delay was 21 days and the shortest, one day.

The following table shows all cases for which full statistics could be obtained and which were treated in California between April 1, 1911, and March 31, 1912. The facts were kindly furnished by the physicians administering the treatment.

TABLE 3.
PASTEUR TREATMENTS ADMINISTERED IN
LABORATORIES IN CALIFORNIA.

April 1, 1911, to March 31, 1912.

| Where and by Whom Administered | No. of Cases..... | Treatments Completed | Deaths | Diagnosis in Biting Animals Based on | | |
|--|-------------------|----------------------------|--------------|--------------------------------------|-------------------------|--------------------------|
| | | | | Negri Bodies or Inoculation... | Observed Symptoms | Suspicious History |
| State Hygienic Laboratory of California State Board of Health. | 39 | 31 | 1 | 34 | 1 | 4 |
| Dr. S. P. Black,* Los Angeles..... | 58 | 56 | 0 | 43 | 13 | 2 |
| Dr. W. W. Cross,* Fresno | 22 | 22 | 0 | 22 | 0 | 0 |
| City Health Dept., San Francisco... | 4 | 2 | 0 | 3 | 0 | 1 |
| Total | 123 | 111 | 1 | 102 | 14 | 7 |

* Treatments additional to those officially administered with government virus for the State Hygienic Laboratory.

The 123 patients came from the various counties of California as follows: Los Angeles, 40; San Francisco, 30; Fresno, 23; Tulare, 10; Orange, 5; Kern, 5; Ventura, 3; San Bernardino, 2; Riverside, 2; Merced, 1; Kings, 1; Santa Barbara, 1.

The infection came from the various animals as follows: dogs, 112; horses, 4; man (not from biting), 4; cats, 2; and ground-squirrel, 1.

The longest delay before beginning treatment was 70 days and the next in length was 49 days. Excluding these two extreme figures the length of time between the biting and the beginning of treatment ranged from 1 to 29 days and averaged 6.6 days.

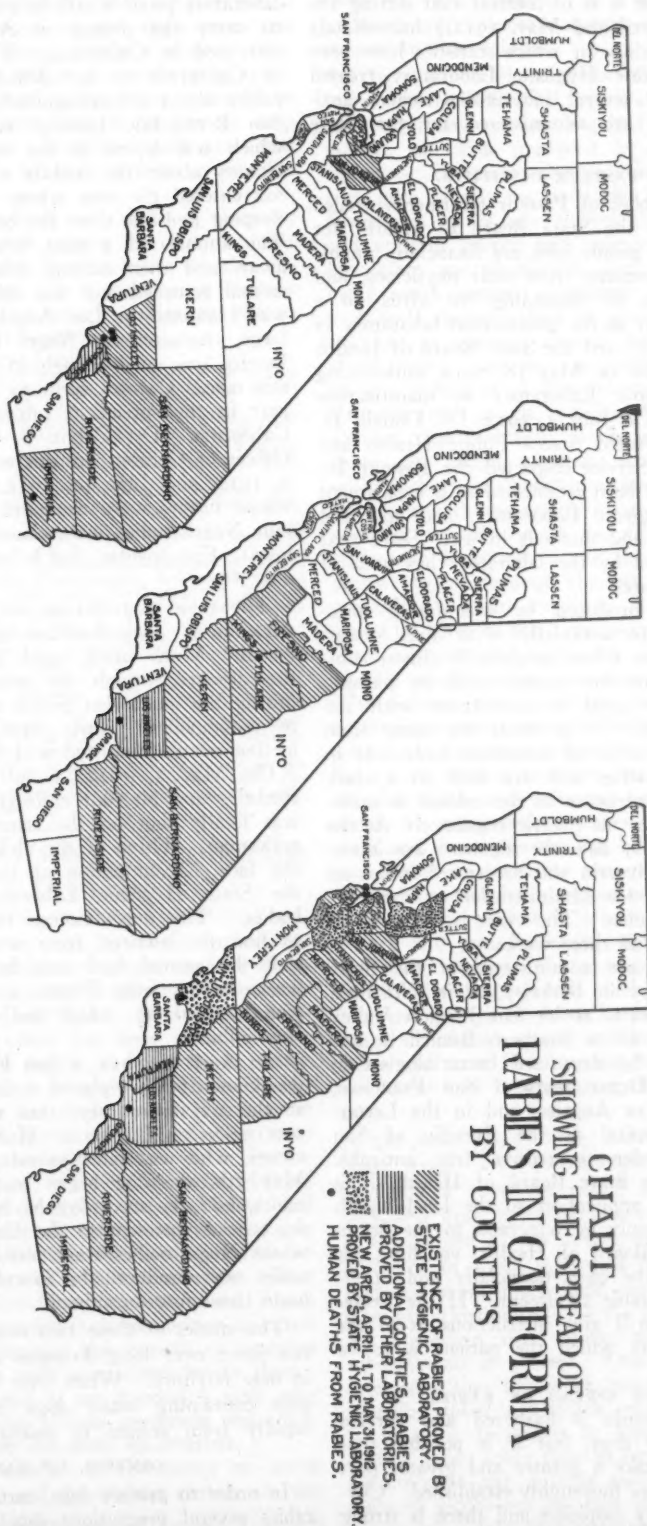
Between April 1, 1911, and March 31, 1912, the United States Hygienic Laboratory sent to California virus for 99 treatments. This virus was probably all used for patients included in the statistics just given. During the same period, three commercial houses, to whom I am indebted for these figures, distributed virus in California for 63 cases. Of these at least 54 are not included in the statistics already given. The 54 cases treated were situated in the following counties: San Francisco, 26; Los Angeles, 11; Fresno, 7; Tulare, 2; Orange, 2; Modesto, 2; San Joaquin, 1; Stanislaus, 1; Imperial, 1; Kern, 1.

Adding together the 123 treatments given in the last table and the 54 treatments sent out by commercial houses, we find that 177 patients were treated in the year ending March 31, 1912. Previous to that year at least 125 treatments were administered as already stated. This gives a total of 302 treatments in California since March 13, 1910, when, as far as I have been able to ascertain, antirabic treatment was first administered in California. Of the 302 persons treated, two developed rabies before the treatment was completed, giving a mortality of 66 hundredths of one per cent. No deaths occurred among those completing treatments.

NOV. 2, 1909, to DEC. 31, 1910

JAN. 1, 1911, to AUG. 31, 1911.

SEPT. 1, 1911, to MAR. 31, 1912.



As an indication of the increasing need for Pasteur treatment it is of interest that during the two months (April and May, 1912,) immediately following the period for which statistics have been collected, the State Hygienic Laboratory treated 66 cases in the several laboratories where anti-rabic treatments are administered for the State Board of Health.

THE PASTEUR INSTITUTE.

The large number of Pasteur treatments needed in California by the State Board of Health for administration to people who are financially unable to secure the treatment from their physicians, and the disadvantages of depending for virus on a source so far away as the government laboratory in Washington, D. C., led the State Board of Health to pass a resolution on May 18, 1912, authorizing the State Hygienic Laboratory to manufacture antirabic virus. On June 3, 1912, Dr. Donald H. Currie of the United States Public Health and Marine-Hospital Service inspected the Pasteur Institute, which had been established as a department of the State Hygienic Laboratory, and approved of the equipment and methods in use. Since that date all virus used by the laboratory has been of its own manufacture.

The virus is produced by inoculating anesthetized rabbits intracranially with fixed virus, chloroforming them when paralysis is almost complete and removing their spinal cords by pushing them out of the canal in accordance with the method of Oshida.¹¹ The cords are hung from silk threads over sticks of potassium hydroxide in Pasteur drying bottles and are kept in a dark cabinet. The temperature in the cabinet is maintained at 20° C. by an electric regulator. As the cords are cut day by day, the segments are immediately placed in glycerin and are stored in an ice chest until needed for administration or shipment to one of the branches. The virus is discarded if unused at the end of three weeks.

The treatments are administered at the State Hygienic Laboratory in Berkeley, at its Northern Branch in Sacramento, at its San Joaquin Valley Branch in Fresno, at its Southern Branch in Los Angeles, and also by deputized bacteriologists in the City Health Departments of San Francisco, Sacramento, and Los Angeles, and in the Letterman General Hospital at the Presidio of San Francisco. In order to receive free antirabic treatment from the State Board of Health, it is necessary to make application to the local health officer. He will apply by telegraph to the Secretary of the State Board of Health, vouching for the suitability of the case, financially and otherwise, for free antirabic treatment. If the Secretary approves, he will give instructions as to the branch laboratory to which the patient is to be sent.

METHOD OF SPREAD OF RABIES.

Rabies in California is harbored and carried chiefly by domestic dogs, but it is possible that wild animals will take a greater and greater part as the disease becomes thoroughly established. Coyotes are under heavy suspicion and there is strong testimony that the disease in California has been

conveyed in a few instances by these animals, but laboratory proof is still lacking. The skunk, known to carry the disease in Arizona, has not been convicted in California. The only wild animals of California so far definitely proved to carry rabies are a ground-squirrel, which bit a girl in San Bernardino County, and a large gray fox which was killed in the mountains of Ventura County about the middle of April, 1912. This fox entered the tent where several campers were sleeping and ran over the bed, pulling the covers. The animal bit a man, who tried to push him away, and then escaped, but the next night the animal returned and was killed. The fox's head was examined in Los Angeles and showed many large characteristic Negri bodies. Dr. R. B. Durfee was good enough to send me the story of this case. Coyotes seem to have played a larger part in the spread of rabies in Oregon than in California. Dr. Calvin S. White, State Health Officer of Oregon, informs me that between April 1, 1911, and June 10, 1912, the thirteen animals whose brains were examined and found to contain Negri bodies were classified by kinds as follows: Five coyotes, five horses, two pigs, and one dog.

The rapid distribution of rabies by rabid dogs who run for long distances has already been illustrated. Much more rapid is the conveyance of the disease through the transportation of dogs during the incubation period over the railroads or in automobiles. Two recent examples of this method are striking and will be cited.

On May 7, 1912, a bull dog went mad in Berkeley and bit four children and a woman and was finally shot on the street in Oakland by a policeman. Three of the children were bitten in the face. Examination of the animal's brain at the State Hygienic Laboratory revealed Negri bodies. The dog's license tag made it possible to find the owners, from whom it was learned that the animal had been brought by train six weeks before, from Fresno, a heavily infected region, to Berkeley, which had previously been free from rabies.

On April 1, 1912, a San Francisco dog, which was known to have played with a dog proved rabid at the city laboratory, was taken approximately 300 miles to Likely in Modoc County by his owner, who was later joined by a brother. On May 7th, the dog began to show symptoms of rabies, and the next day he bit both men. The dog's head was sent to the University of Nevada where Negri bodies were found in the brain and rabies was produced by inoculating some of the brain tissue into an animal.

The stories of these two dogs show how rabies can jump over long distances and start outbreaks in new territory. When once established in a region containing many dogs, the disease spreads rapidly from animal to animal.

CONTROL OF RABIES.

In order to protect dogs, cattle and people from rabies several precautions should be taken. The roaming dog population should be diminished as

much as possible and every dog at large should be muzzled with a well fitted metal muzzle which projects beyond the end of the dog's nose and absolutely prevents biting. If the disease is thoroughly under control within a certain area, quarantine against dogs from infected areas should be considered. It has been proved possible to keep rabies out of isolated countries, such as Great Britain and Australia, by a six months' quarantine on all dogs.

Rabies is a disease very easily held in check by simple measures directed toward the control of the chief reservoir and distributing agent of the disease, the domestic dog. It is therefore a disgrace for any community to permit rabies to become prevalent within its boundaries.

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CLINICAL SYMPTOMS OF ALCOHOLISM AND ITS TREATMENT.*

By R. E. BERING, M. D., San Francisco.

Until within recent years but little interest has been taken in this subject, in consequence of which but meager information can be obtained from medical teaching or medical books. No organized attempt or scientific effort has been made to treat alcoholism with any degree of hope for a permanent recovery. But, as in other branches of medicine, much thought and study is now being given to the treatment of this disease. It has attracted the attention of states and nations where institutions for the care and treatment of those addicted to the excessive use of alcohol are established, and a permanent recovery of from forty to sixty per cent is obtained. With such a wonderful showing from the reports of public institutions where the patients are oftentimes the flotsam and jetsam of the world, no wonder such enthusiasm is manifested by those practicing this branch of medicine as a specialty with such possibilities before them.

In the limited time at my disposal I shall only touch on some of the clinical symptoms and treatment as come under my daily observation.

The fact that alcohol is destructive to nerve cells is undisputed, and the highest centers are the

ones first damaged, thus throwing all concomitant parts out of adjustment; as a result inhibition is impaired and voluntary action is hampered—then serious trouble follows.

Where an occasional drink shows but little effect upon the individual, after a short time larger and larger amounts are required to satisfy the abnormal condition produced by nerve destruction and toxic irritation; deterioration of brain structure goes rapidly on until the patient is as positively sick as is one suffering from tuberculosis and without proper help cannot refrain from the inordinate use of alcohol, and if the attempt is made much mental excitement is the result.

A well marked train of symptoms appear that are just as classical as are the symptoms of typhoid fever, and are as follows: An intense nervous condition of dissatisfaction; ill at ease; an irritated reflex cough; a feeling of emptiness in the stomach that constantly craves and longs for something—the feeling or desire is not specifically for whisky, but an "indefinite something"; sneezing comes on with the regularity and severity of those addicted to the use of morphine; eyes and nose water; an irritation of the throat that causes the patient to go through the act of swallowing repeatedly with an excessive flow of saliva. In course of time, as the damage to the brain increases from the physical symptoms just mentioned, an equally marked series of mental symptoms appear. The patient, who previously had been of a jolly, humorous nature, seeing only the good in life and people, is suddenly noticed to be morose, always in a surly temper, taciturn, hardly if ever caring to meet others and talks but little. This is superseded by melancholia. Everything in life looks dark and dreary, he has lost his ambition and pride and ceases to strive to maintain the standard of living to which he is accustomed. Suicidal mania is next: the patient is always brooding over his future and sees no bright light to assist him in his daily struggle for existence, and from constantly dwelling on the dark side, finally, in a moment of deepest gloom he takes his life and another drunkard's grave is filled. It is a wonder more and more lives are not taken annually when we know how damaged are the higher brain centers.

Yet with proper care and treatment many of these cases are permanently cured and such thoughts as above mentioned are banished. Auditory and oral hallucinations are manifest. Truly a sad picture is now before us, but thanks to the activities of those interested in this work in the past few years, much hope can be held out to this class of unfortunates, and the time will come when the profession will display more interest in the subject than at present. One reason for so little interest is that this work has been left to the advertising faker and quack who made no pretense to scientific treatment or knowledge of what he desired to do other than to secure the dollars from an innocent but gullible public. But the treatment of alcoholism has now been placed in a class of medicine deserving recognition and is so recog-

* Read at the General Meeting of the San Francisco County Medical Society, May 14, 1912.

nized. Yet there are many physicians who scoff at the attempt to rescue this class from positive death and many years of a condition far worse than death, as the patient will be in a physically fit condition, but mentally dead; yet with so large a percentage of recoveries before us it is not just in any one to act the part of the doubter any longer.

The treatment is not stereotyped; far from it, but it is the individual study of each patient, after which proper medication is given. In a general way the following is the one successfully used by me for a number of years. Primarily it must be recognized that each patient is suffering from toxemia; this condition must be overcome before the patient is ready to start treatment. For this condition I use calomel and jalap for the bowels until free purgation is secured, followed by high enemas; dram doses of phosphate of soda in warm water each morning, this usually flushes out the alimentary canal and with the increased flow of bile gets the bowels in a good condition. Hot packs and vapor baths are used to secure free action of the skin, usually used every other night until sufficient elimination has been secured through this channel. The kidneys are looked after with any of the ordinary diuretics, depending upon the report of the examination of urine which must invariably be done as many incipient cases of albuminuria are thus detected and cleared up. After being satisfied as to the cleansing process, then strychnine 1/30 is given hypodermically every four hours until some action of the drug is noticed, when it is discontinued for several days then resumed and given at intervals of six hours. In conjunction with the strychnine, hyoscine hydrobromate is given in doses beginning with 1/400 of a grain every four hours and gradually increased to 1/100 of a grain every hour or two until a mild physiological action is secured, then kept at that dose for several days. Hyoscine, when properly administered, is as much of a specific in this disease as is antitoxin in diphtheria. It will absolutely remove all desire for alcohol and empirically has proven to restore, or at least assist, in the restoration of the damaged nerve cells, for after a course of hyoscine the faculties that have been most diseased soon regain their normal functions.

I fear some may say it is due to the cleansing out of the patient and a freedom from toxemia; no doubt, such is a factor in the case, but I am positive from years of observation, that it is due more largely to the action of the drug directly upon the brain center.

I wish to digress and call attention of the members present to the fact that while hyoscine is a safe drug when cautiously used, it is one of the most dangerous when not so used. It is particularly dangerous in those cases of over stimulation where the heart muscle is weak and ready to cease functioning. In delirium tremens I would caution against its use. Particularly where it is given in 1/50 grain doses to produce sleep, as it is prescribed by some physicians. I know of a number of deaths directly responsible to this practice.

In my experience it is of no benefit in such cases, and should not be used.

The action of hyoscine is maintained for several weeks. In addition to the above, constant attention is given the emunctories; regular habit of living should be encouraged. Besides the administration of medicine, to my mind at least, enters now one of the important features of the permanent result of your treatment and that is the education that accompanies it.

Each and every one of these patients is down and out and needs encouragement and sympathy. Following the old motto, there is something good in the worst of us; it should be the duty of one doing this work to devote sufficient time to the study of the patient in order to discover this feature of good and use it as a lever to restore confidence in himself so necessary before definite results can be expected. It is difficult to express in words to what extent this can be carried out, but there are unlimited possibilities to assist in securing results that can be obtained in no other way.

A word of warning to the practitioner is that he should regard these people as seriously ill and in transporting them from one point to another, it should be done with an ambulance and the patient in a horizontal position, and not in a taxicab where oftentimes the patient is allowed to drop to the floor of the machine in a cramped position, thus crowding all the abdominal organs upon the chest and creating a pressure on the heart and lungs that is extremely dangerous. One case in mind when the patient was taken out of the taxicab after riding on the floor in the position described, was found to be cyanosed and with edematous lungs from which she died within a few hours. These patients also suffer frequently from an acute dilatation of the heart and should have the constant supervision of a competent nurse who can act immediately upon the first sign of such a condition arising.

I will close this paper with the admonition to regard patients suffering from an excessive use of alcohol as being seriously ill, and treat them accordingly.

Discussion.

Dr. McClenahan: I do not think that I can add very much to what Dr. Bering has said, as I have not had extensive experience in treating alcoholism, and none with this hyoscine method of Dr. Bering. The paper deals particularly with the initial treatment of the condition, and I think this is only a start in actual curative results. Before overlooking it, I wish to emphasize what Dr. Bering has said about the dangers of hyoscine, particularly in the larger doses. I have seen probably one, and possibly two cases terminate fatally when 1/50 of a grain has been administered hypodermically: one was a case of delirium tremens in a young man; the other a case of an old gentleman suffering from abstinence symptoms of morphine.

It has always struck me that the physician's best attitude toward the question of alcoholism is to divide the subjects into four classes: 1st, the pathological physical changes resulting from the excessive or prolonged use of alcohol in the various organs of the body, as met by every physician; 2nd, pathological changes produced by alcohol in the nervous system, particularly such as neuritis,

and the various psychoses, as the deliria, hallucinoses, Korsakoff's disease, and dementia. Then the 3rd and 4th classes, constituting the principal ones that seek medical service for breaking the habit, as it were, viz., the habitual and periodic drunkards. With the periodic, his drinking is simply a manifestation or symptom of his condition or disease, just as the convulsion is a manifestation of epilepsy. The habitual drunkard becomes diseased by virtue of his drinking, and in both cases the most probable explanation lies in the fact that the use of alcohol is the expression of an unstable nervous organization. The individual is unable to successfully cope with his environment and resorts to alcohol for assistance. Consequently, the initial treatment, whether it be hyoscine or any other drug, I regard as only primary; for I think the time element is much more prolonged than is claimed by this line of treatment. I do not regard either kind of case as restored until he has abstained from drink for two or three years.

Another important factor to be considered in this class of cases is the question of control. They are all difficult to handle, for they are optimistic and as soon as the abstinence symptoms subside, and they are over the acute effects of alcohol, they think they are well and insist upon returning to work. Then—generally a relapse, and the ultimate result is disappointing. When the use of alcohol has been in sufficient quantities or extending over sufficient time to produce organic changes in the central nervous system, I regard the prognosis as unfavorable in practically all cases.

Dr. Hoisholt: I did not come prepared to talk on this subject, but I will say that the attention to be given cases of alcoholism is not difficult in the acute stage; after tiding over the acute stage, the trouble lies in the management of the after cure. You all know what the state is doing at present for the inebriates. Somebody interested in alcoholics succeeded in having a law passed regulating the commitment of these cases without making any provision for the care of them. They are sent to institutions for the insane, where they occupy the same wards as the insane. The asylums are so crowded that the patients have to sleep on the floors and it is impossible to segregate the inebriates from the insane. Besides, most of the institutions have but a few large buildings, with exercise-wards where contact of inebriates and insane cannot be prevented. We have had experience with this law for a year and four months, and many cases have been received at the institutions. The law has made money flow into the pockets of the sheriffs, but I do not think it has done the alcoholics much good. The asylum at Stockton, which is inside the city limits, is not far from the nearest saloon. There is no law about keeping saloons away from asylums, only from universities and schools. There is a saloon on the corner, one block from the entrance to the asylum. Patients will stray over there, or to other saloons, and many of them come back drunk. They feel that it is a punishment to be kept with the insane, and this has been supposed by the originators of the law to deter them from future drinking. They spend a month or two working, are then paroled and allowed to walk on the grounds. They do well for a while, are given a pass to go into town, and it is only a question of time before they come back intoxicated. This is rather a sorry picture! The institutions are not able to do right by these cases, but the legislature passed the law without preparing for carrying out the work. Other states have shown us what California should do. In Germany, where I was in '03, they had several years previously given up sending inebriates among the insane, and here, as well as in several states in the East, they are now sending them to farms. Not only should they not be among the insane, but alcoholics should be with alcoholics,

so that the bad as well as the good example can be held up to them as to a class. By giving them an education to strengthen the will-power (and that education should be extended over several years; a few months does no good), and by having them on farms where they can be kept away from towns and kept under control, the state would be doing its best for the inebriates. There is not one in a hundred inebriates that you can believe or trust as is at present being done at the state institutions for insane.

Dr. J. W. Shiels: I have had a varied experience with alcoholism. I was once in an asylum myself—as an acting superintendent. This was in Mavisbank Asylum, Scotland. There we treated many drunkards. We did not believe in any of the so-called "cures" and based our treatment upon time and imprisonment; and we did not think a man safe to follow out future treatment without supervision until he had been with us at least six months, even then we were by no means sure of success. We gave them every consideration, every moral uplift possible, super-nutritioned them, and permitted no mental or physical fag, keeping them out of temptation as long as possible, and then subjecting them to graduated parole. All were voluntary patients, but on entering the institution they signed a document which gave them the impression that we had a legal control and as a rule we seldom had difficulty in keeping them the full time. One patient I remember very well proved how useless all treatments may, on occasions, be. After his six-month stay he declared that he was cured! and that his duty called him home. He was all strength and confidence, and that made us very uncertain of him. We persuaded him to stay a little longer, telling him that although we had faith in him it was just as well to make assurance doubly sure. He stayed three months longer when the news came that his wife was seriously ill, and he insisted upon going to her to nurse her and—by his love and care of her—make up for his past life of selfish drinking. We let him go. When his wife died he was found drunk beside her bed.

If a man does not want to keep sober, all the hyoscine in the world will not make him so, for we cannot inject a conscience with a hypodermic needle. He must want to give up alcohol just as he might want to give up opium or morphine or any other drug habit. But hyoscine in the hands of Dr. Bering has been the beginning of many a true cure of alcohol habit, and I speak of what I know for I have followed him through at least three or four cases. Every case is watched very carefully in the most painstaking manner, and I have seen him sacrifice many a sleeping hour to control the action of hyoscine.

So it seems to me that we are very fortunate, particularly so, in having an honest medical man give all his time to the cure or to the consideration of drug habits, especially alcoholism. The work used to be done by men of little consequence, sort of medical confidence-men preying upon the weak. So we should by courtesy and attention and support show our appreciation and thanks to Dr. Bering when he brings back our patients in a sound state of health, trying with all their souls to control their habits and giving us a far better opportunity of being of value to them.

Dr. Bering: Replying to Dr. Hoisholt regarding the permanency of cures, would state that the reports of various public institutions for this work in the East and abroad show positive results of from 40 to 60%, which is verified by a follow-up system in all cases. The State Hospital at Knoxville, Iowa, report a recovery list of over 40%. The State Hospital at Foxboro, Mass., started in unpretentious quarters and with but little equipment; this has been increased to a section of land

and has three distinct departments, one for male patients, one for female patients, and the other for the incurables. Many of the eastern states are establishing institutions for the care of such patients. Replying to Dr. McClenahan regarding the time necessary for a cure, would state that for an average patient I find from one to two months sufficiently long to eliminate the desire for alcohol and get the patient in a proper frame of mind with improved physical condition, when they can care for themselves.

Referring to the question of education and the removal of irritating influences and how necessary it is as a part of this treatment, I will mention the following case: A young man, belonging to a wealthy family, who had secretly married, thus causing a separation between himself and his family. This worry and constant excitement kept him in a condition of whisky drinking and sobering up spells, going from bad to worse. Realizing the futility of medicine alone, I perfected a reconciliation between him and his family, which I now believe will be the means of assisting towards a right living on his part. These patients should be under the absolute control of the physician treating them, and away from family influence. I am now speaking of a class of patients who desire to be cured, and not the common drunk. A patient who will not co-operate with the physician is in the same position as the one suffering from a fractured bone who will not allow it to remain immobile, as a result, failure in both instances.

The great difficulty with this work is that the layman and physician have been led to believe the impossible could be performed, which, of course, is not correct; but with proper care and treatment enough permanent recoveries are made to justify the attempt with any case before condemning them to a future of misery, unhappiness and ending finally in a drunkard's grave.

In closing would urge upon the members present the great necessity for the state providing a hospital for the care of such cases, which would be of great benefit to the individual, his family, and besides prove of great economic value to the state.

300 Page street.

EXPERIMENTAL SURGERY OF THE HYPOPHYSIS CEREBRI.*

By H. EDWARD CASTLE, M. D., and H. A. L. RYF-KOGEL, M. D., San Francisco.

Animal experimentation of the hypophysis cerebri is of twofold interest: (1) Because it is the only method by which we can come to an intelligent treatment of the affections of this organ in man; (2) Because we know so little about its function. Within the last quarter of a century much painstaking work has been done on the pituitary gland: many have tried to learn something of its function by its removal, others have tried to solve its mysteries by injecting its extracts. At present we must admit the functions of this gland are unexplained by the results which have been obtained by the various experimenters.

Gaglio,¹¹ Friedman and Maas,¹⁰ Lomonaco and Van Rynberk,²⁰ Biedl and others assert it is not essential for the maintenance of life. They show the possibility of producing the same symptoms when the gland has not been removed. As the work of these experimenters was not corroborated by the use

of the microscope we are led to believe they interpreted partial for complete hypophysectomy.

Dalla Vedova²⁹ found in his experiments few of the symptoms following removal of the pituitary gland that were described by others. In his first work he described paralysis in walking, which was spasmodic in character, muscular tremor, and opisthotonos, but declares they were all transient. Subsequently he concluded a fragment of the stalk is essential to maintain life in the animal. Gemelli draws from his studies and experiments on the hibernating marmot that the pituitary gland secretes an antitoxic substance and that its removal is compatible with life. Vassale and Sacchi²⁸ found their animals to have definite urinary symptoms, viz: alkalinity, low specific gravity, polyuria, but no sugar, and such symptoms as low temperature, loss of weight, asthenia, anorexia, disturbance in gait, convulsions and coma.

Michael Foster⁸ in his text book of physiology says: "... but concerning the process which takes place in this gland, and the purpose of it as a whole, we know absolutely nothing." Jacob Lewin¹⁸ writes as follows: "For some (Roth, Wildersheim, Corning, and Strumpell) the hypophysis is merely rudimentary and has no essential function." Schiff, Marienesco, and Wolf consider the gland essential for the sustenance of life. Olierer regards the secretion of the pituitary gland as one of the substances that regulate the blood pressure. We quote from G. W. Stewart's²⁶ text book of physiology, 1905 edition: "... the infundibulum is probably what remains of the gullet of the ancestors of the vertebrates. The pituitary body consists of two parts, the anterior lobe or hypophysis, and a posterior lobe or infundibulum. The former is derived from the buccal cavity, the latter from the fore brain. When the pituitary gland is removed the animal usually dies within a fortnight (cats and dogs). It has been said the pituitary gland undergoes hypertrophy after the thyroid gland has been removed. This is disputed by Schaefer. Extracts of the anterior lobe when injected are inactive. Extracts of the posterior lobe contain two substances, one a pressor and the other a depressor. The pressor is soluble in salt solution but insoluble in absolute alcohol and ether. When injected it causes a definite rise in blood pressure, which is due in part to constriction of the arterioles, and in part to an increase in force of the heart beat. These two changes are both produced by direct action. A second dose injected before the effects of the first have worn away is inactive. This distinguishes it from suprarenal gland extract. The depressor substance produces a marked fall in the blood pressure, even when it is injected during the rise of blood pressure which is caused by injection of the pressor substance."

Caselli experimented with various animals, including frogs, rabbits, cats and dogs, employing the pharyngeal, buccal and spheno-palatine routes of approach. His arduous work proved of little avail owing to the uncertainty of his methods. His problem was to ascertain to what degree the

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secretions from the parathyroid and thyroid glands were influenced by that of the hypophysis. He came to the conclusion that the secretion of the latter had a controlling influence over that of the former glands. Not only did he realize the gland to be of physiological importance to the development of the animal, but also to the maintenance of life.

The buccal route was employed by Gatta¹² for the removal of the hypophysis to determine the relation between it and the thyroid. His experiments were with thyroidectomized cats, all of which died within nineteen days.

Hillion and Alquier¹⁴ studied the histologic changes in the other ductless glands after the injection of extracts of the hypophysis of the ox. They found practically no changes in the parathyroids, suprarenals, ovaries, islands of Langerhans, or spleen. What few changes did take place were not constant. However, in the thyroid there were constant changes manifest, viz: a diminution in the quantity of colloid present in the vesicles and a modification in the protoplasm in the tissues around the cells.

Tigerstedt²⁷ agrees with most authors that there is a definite relation between the pituitary gland and the other ductless glands. He has observed hypertrophy of it in myxedema and following thyroidectomy. This author thinks the pressor and depressor substances of which Stewart speaks are possibly products of decomposition, or are artefacts formed during extraction. In closing he makes this very significant remark: "From so many conflicting statements as to the effect of the extirpation of the pituitary we can not tell whether any disturbance from the loss of it alone follows."

Schaefer and Herring²⁵ claim the posterior lobe of the hypophysis yields a substance which acts specifically upon the kidneys, producing a marked dilatation of the vessels and an increase of urine.

Paulesco's²² very careful work in Bucarest, from all appearances, has proven that part of the infundibulum is essential to the animal economy, that if only a microscopic portion remains intact the animal will survive indefinitely. These views are only corroborative, however, to those of Dalla Vedova, whose experiments in 1904 proved to him that the saving of two-tenths millimeters of the infundibulum was sufficient to maintain life. The conclusions of Paulesco are worthy of giving as recorded by him:

"1—Hypophysectomy causes death in about twenty-four hours.

"2—Removal of the epithelial (anterior) lobe is equal in result to complete hypophysectomy.

"3—Removal of all of the nervous (posterior) lobe is not followed by symptoms, and may be survived indefinitely.

"4—Opening the third ventricle causes no untoward symptoms.

"5—Periinfundibular injuries to the base do not rapidly cause death, but are the cause of definite symptoms, some of which are: hemiparesis, hemispasms, convulsions, incurving of the animal sideways, etc.

"6—Separation of the hypophysis from the sella turcica is not harmful.

"7—Separation of the stalk from the base of the brain causes death the same as complete removal of the gland."

Redford and Cushing²⁴ in a set of carefully conducted experiments on animals have corroborated the experience of Paulesco. They have followed his technic in general, modifying it slightly to suit their fancy. Their animals have lived slightly longer after operation than did those of Paulesco.

Paul Clairmont and Hans Ehrlich⁴ have endeavored to learn of the practicability of transplanting the hypophysis cerebri into a host. They experimented on rabbits, guinea pigs, and dogs, using the spleen and abdominal wall for the field of implantation, and making the grafts between the organ and reticulum of the spleen and between muscle and fascia in the abdominal wall. Their observations were made between ten and sixty days. In no case was the grafted gland present in sufficient quantity to cause one to presume it might be functional. The investigators suggest their contemplation of changing the metabolism of animals prior to implantation of the hypophysis by removal of some of the other ductless glands.

Crowe, Cushing and Homans² while not completing their observations, had some definite results from the homogeneous implantation of the hypophysis in hypophysectomized animals. They found in seven such implantations that there was a marked abatement of the symptoms of cachexia hypophyseopriva and death was in abeyance for an appreciable time.

ANATOMY (DOG'S HYPOPHYSIS CEREBRI).

The hypophysis cerebri rests in the sella turcica, which in the dog is merely a shallow fossa. The bony boundaries are not well developed. In front, the olivary process is ill-defined; the anterior clinoid processes are absent. On either side are the cavernous sinuses, in which are the carotid arteries, oculo-motor nerves, trochlear nerves, abducent nerves and the ophthalmic division of the trifacial nerves. Posteriorly is the dorsum sella, a small prominence, which has no clinoid processes. The floor of the sella turcica is covered with dura mater, but there is no diaphragma sella to roof the fossa, as there is in the human.

The hypophysis has three component parts, viz: 1st, the infundibular stalk; 2nd, anterior lobe; 3rd, posterior lobe. The two lobes are separated from each other by a cleft, and united to the brain by the stalk. The anterior lobe partially envelopes the posterior lobe. The latter is firmly adherent to the dura mater at the posterior part of the sella turcica. Owing to a backward bending of the infundibulum the lobes rest in a plane posterior to the stalk, rather than inferior to it as obtains in the human. The lobes are situated between the third ventricle above and the dura of the sella turcica below. On either side somewhat anteriorly are the carotid arteries branching into the middle and anterior cerebral arteries.

The infundibular stalk is the attenuated down-

ward projection of the tuber cinereum; thus we see the stalk is in intimate relation with the third ventricle.

MICROSCOPIC ANATOMY.

The anterior lobe is composed of glandular substance surrounded by epithelium, somewhat similar to the structure of the parathyroids. This lobe is possessed of two parts, a corticle and a medullary. The condition is similar to the one existing in the pancreas and suprarenal glands. The posterior lobe is composed of neuroglia, blood vessels, and connective tissue. It is surrounded by epithelial cells which extend high along the walls of the stalk. The greater part of the blood supply of the anterior lobe is derived through the stalk; while the posterior lobe derives its supply of blood from the vessels which enter it through its firm attachment to the upper part of the dura lining the dorsum sella.

EMBRYOLOGY.

As in the anatomy so also in the embryology, the two lobes of the hypophysis are distinctly separate. The posterior lobe and the infundibulum are of neural origin, being a ventral diverticulum from the primitive neural tube. The anterior lobe is developed from the stomodeum as a diverticulum, known as Rathke's Pouch. This diverticulum generally becomes disconnected from the buccal cavity. When it does persist it is termed the cranio-pharyngeal canal. *A priori*, it will be seen both lobes are of ectodermal origin.

Our problem consists in the implantation of the pituitary gland of healthy animals into various organs of healthy animals of the same species.

1st series: Twenty healthy, medium size dogs were selected, ten were donors of their hypophyses and ten recipients of the same. Under the most careful precaution to avoid contamination from bacterial or chemical sources, the two lobes of the hypophysis were removed with their accompanying stalk in toto, and implanted immediately into the subdural spaces of the several recipients.

2nd series: The three component parts of the hypophysis cerebri were removed without mutilation from five healthy, medium size dogs and immediately implanted in the substance of the right frontal lobe of the cerebrum of the recipients.

3rd series: In the medullary cavity of the right femur of each of five dogs the two lobes and infundibulum of the hypophysis cerebri were, without separation, implanted.

4th series: Three medium size dogs suffering from hypopituitarism, due to partial removal of the gland, were used for the donees of the total hypophysis. In two instances, the grafts were made in the subdural space; in one case, in the substance of the right frontal lobe of the cerebrum.

In our work we have followed quite closely the method of Paulesco, modifying it to suit our convenience. It is in detail as follows:

General preparation of all animals and technic of the removal of the pituitary gland. Each animal is kept for two weeks prior to his operation, in order to accustom him to his new environment and to ascertain if he is free from disease. The

evening before operation he is given two ounces of castor oil and nothing to eat. One-half hour before operation morphine and atrophine are given, the dose depending on the size of the animal; generally speaking, it is $\frac{1}{5}$ of a grain of morphine sulphate and $\frac{1}{100}$ of a grain of atrophine sulphate. The head is shaved and washed in hot bichloride solution, the strength of which is 1:1000, then dried and three coats of tincture of iodine are applied. The anesthetist holds the animal between his legs until narcosis is produced, after which the animal is fastened to the table with his abdomen downward and the head resting on a sandbag which is four inches in height. The end of the table on which the head rests is elevated to the extent of eighteen inches. After screening the anesthetist from the field of operation, the animal is covered with sterile linen. Through the opening in the sheet there appears only the field of operation, which is covered with a towel wet in a solution of bichloride of mercury, the strength of which is 1:10,000. This towel is cut to correspond with the proposed skin incision. The skin is incised over the sagittal suture from $\frac{1}{2}$ of an inch posterior to the glabella to theinion. A second incision is made perpendicular to this extending from it to the zygoma, midway between the eye and the ear on the side of approach. The cut edge of the towel is sutured with closely placed interrupted sutures to the edge of the skin along the incision. Before opening the skull on the side of approach the scalp on the opposite side is retracted and a large decompression made, removing nearly one-half of the skull, thus giving ample room for the free mobility of the brain without injury to it from pressure. After opening the dura widely the muscles are placed over the defect without suturing and the skin is permitted to retract into its normal position. On the side of approach, the temporal muscle is severed one centimeter from its upper attachment and then removed from the side of the skull with a periosteotome down to its insertion on the coronoid process of the mandible. The zygomatic arch is displaced by severing it at either end with a Horsley bone forceps. A trephine opening is made over the parietal eminence with a Doyen drill and burr for the use of the rongeur, which removes the bone in a downward and slightly forward direction as far as the base of the skull. The center of the lower end of this opening is about opposite the coronoid process. The brain with the dura intact is gently lifted from the temporal fossa with a smooth spoon retractor. By hooking up the dura with a dural hook it can be readily incised with a Freer's nasal knife without injury to the arachnoid and pia membranes. The incision in the dura is one and one-half centimeters long. Into this incision the unprotected spoon retractor is introduced and pushed gently inward, hugging the floor of the temporal fossa to avoid crowding the brain ahead of it. When the cavernous sinus is reached the retractor is slightly elevated and advanced inward one centimeter farther. By carefully raising the brain a little higher there comes into view the oculo-motor nerve, the optic

nerve, the internal carotid artery with its middle and anterior divisions, and the pituitary gland.

The gland is freed from its cohesion to the floor of the sella turcica and from its firm attachment to the dorsum sella, by a small round pointed probe. The stalk is cut from the brain with a small sharp curette and the gland lifted out of the cranium. The brain is permitted to settle back into its normal position, and the muscles and skin are sutured into their respective places, without drainage. A moist 1:10,000 bichloride dressing is applied and held in place by a crinoline bandage. The animal is placed in the heating chamber on the table, the head of which is still elevated, where he remains for several hours. All pain is relieved by morphine sulphate. The following day the dressing is changed to relieve constriction, and the animal is fed milk.

Technic of Implantation.

Series No. 1. A trephine opening is made in the skull over the right frontal lobe of the cerebrum. After incising the dura mater to the extent of one centimeter, the pituitary gland is pushed downward nearly to the base of the brain and left resting between the dura and arachnoid.

Series No. 2. Dura is opened through a trephine vent. By means of a blunt elevator the substance of the right frontal lobe of the cerebrum is separated to the depth of two centimeters; in this wound in the brain substance the three component parts of the pituitary gland are implanted. The dura and skin are closed over the defect, without drainage, by sutures.

Series No. 3. An osteoplastic flap one and one-half centimeters square is removed from one surface of the right femur, including the wall of the shaft to the medullary cavity. In the cavity the entire hypophysis is grafted after all hemorrhage is controlled. Then the osteoplastic flap is sutured into place.

Series No. 4. In this series the technic is analogous to that employed in series No. 1 and No. 2.

Results: As the end results are the same in the various experiments we are here reporting, we can justly give them together. At the expiration of three weeks the grafts were inspected. Nothing remained which was demonstrable either macroscopically or microscopically. The glands were completely absorbed and newly formed connective tissue was occupying their former locality. As to the results of removal of the hypophysis of dogs, which is merely a side study, our work has been corroborative of Dalla Vedova's and of Paulesco's. All of our animals which had the entire stalk removed succumbed within forty-eight hours, some as early as twenty-two hours. Those retaining part of the stalk of the hypophysis lived an indefinite length of time. None, however, lived over nine months after the operation.

We are very reluctant to offer our results, and do so merely as preliminary to a more valuable report we trust we may make at a subsequent time. Our work has been pursued very carefully, but it does not represent either time or quantity sufficient to make it authoritative. The facts we have ob-

tained are only pertinent to a special species of animals operated under special conditions. The conflicting results reported by various experimenters prompt us to comprehend the complexity of the subject, and to feel that under different conditions we may obtain diverse results.

Conclusions: The hypophysis cerebri is situated anatomically in such a position that its removal by different workers is prone to be inductive of varying results. Any insult to the base of the brain may be followed by grave symptoms. The operation of hypophysectomy when performed on the dog is not difficult of execution. It has been performed by us in less than twenty-five minutes. It is an operation involving a great amount of tissue. The skin incision, the detachment of all the muscles from the cranial vault, the great bone defect that must be made on either side of the head, the cutting of the dura and withdrawal of the cerebral fluid, the dislocation of the brain, and the separation of the hypophysis from the brain, make it an operation which, in the majority of cases, causes many symptoms of various magnitudes. Symptoms so produced are not correlative to those of hypopituitarism. Owing to the delicate organization of the pituitary gland it is not endowed with vitality sufficient to maintain it when grafted, long enough to permit of its gaining nourishment capable of its sustenance.

A priori, when the hypophysis cerebri of the canine is implanted into organs whose blood supply is the best, it will be absorbed by the surrounding tissues, therefore will not functionate when grafted. Notwithstanding what has gone before, we still believe it may be possible, by means of more proficient technic, to transplant the gland and have it functionate in the recipient.

We believe the pituitary body is a ductless gland which has an internal secretion closely correlated to that of some of the other ductless glands, especially to that of the thyroid, ovaries, and testes. Our experiments have proven to us that the pituitary gland is essential to life, but they have not proven that part of the gland is capable of the maintenance of life indefinitely, without symptoms. We believe, as do the majority of experimenters, that the secretion of this gland has a controlling influence over the nervous system; in what manner this influence is initiated we do not theorize. This conclusion is drawn from the fact that hypophysectomized animals usually suffer from various nervous disorders. The anterior lobe, when *in situ*, has the greater control over the other ductless glands, for when it is extirpated there are often changes in the ovaries, testes, and thyroid. There is also often manifested a general adiposity and irregular changes in the urine. This cachexia hypophyseopriva is not produced by the removal of the posterior lobe.

With the vast amount of careful investigation that is now in progress we believe two very important questions relative to the pituitary gland will soon have been answered, viz: 1st, what is its function, and, 2nd, what is the value of its transplantation.

Discussion.

Dr. F. D. Tait, San Francisco: I want to congratulate the reader upon his persisting and painstaking efforts. Such work is difficult under the most favorable conditions, even for such a skilled technician as Dr. Castle. Before speaking on the question under discussion I want to sound a note of warning for those who contemplate entering the field of experimental research. We owe it to those who have preceded us, as well as to those who will follow, to delve into our libraries most thoroughly, especially into the foreign files, prior to attacking any problem, and more particularly prior to burdening the *Index Medicus*. This precaution is more especially indispensable in problems relating to the ductless glands (Biedl gives over 5000 references). At this price only can one hope to avoid the mistake we have all made and to which I certainly plead guilty: the repetition of useless experiments. A more careful review of recent biological monographs would surely have saved Dr. Castle many hours of experimentation. The two salient points in Dr. Castle's communication are, 1st, the fate of isografts, 2d, the route of implantation. In determining the fate and therefore the value of glandular grafts experimenters consider 1st, the preservation of form (histological test), 2d, the preservation of function (physiological test). A successful graft must respond to both of these tests. While autografts, especially in conditions of created deficiency (Halsted) may succeed in a high percentage of cases, isografts (parathyroid, hypophysis, suprarenal, testis, etc.) invariably fail. The only exceptions are with glands from closely related animals (from the same litter, for instance) or with fetal tissues. Hence the total abandonment of graft experiments by Carrel (kidneys, limbs, etc.), Frouin or Paris and Stich of Bonn. The difficulty is not one of technic, it is biological. Little unfortunately is known of the interrelations of foreign tissues. This problem is engaging the constant attention of Carrel and his brilliant Swedish assistant, Ingebrigsten, whose most recent findings seem to indicate that hemolysis may explain all and thus furnish the much needed test whereby the grafting properties of tissues may be accurately determined.

Now as to the 2d point in Dr. Castle's paper. A long list of published failures in gland implantation has shown the numerous advantages of the preperitoneal space or within and behind the rectus abdominis. It is entirely unnecessary to resort to the subdural route in grafting hypophyses. Cushing's unsuccessful human case is additional proof of this fact. The graft cannot be watched in such a location and, furthermore, its subsequent removal (physiological test) cannot be accomplished as satisfactorily as in the usual site for grafting. I have been actively occupied with the subject of grafts during the past year and the experience thus gained, added to the benefits of close relations with several notable experimental laboratories, prompts me to suggest that practitioners place less confidence in text-books and follow more closely the work of physiologists and biologists.

Dr. H. A. L. Ryfkogel, San Francisco: I had the pleasure of assisting Dr. Castle in this series of experiments and as Dr. Tait has courteously said, the greatest possible technical care was taken. It was interesting to note the great amount of displacement which could take place in the canine cerebrum without doing great damage. In some of our cases we thought at first there must be a mistake in the statement that removal of the hypophysis was necessarily fatal until microscopic examination showed that minute remnants still remained. In regard to the necessity of preliminary

reading before making experimental work, I would add a little to Dr. Tait's requirements, a search of the literature should not only be undertaken but should be very carefully carried out. Dr. Castle was thoroughly familiar with the literature of hypophyseal transplantation and his reading of Hans Ehrlich's work suggested to him his line of experiments. Ehrlich had done his transplantations into the abdominal organs and walls and Dr. Castle thought it would be interesting to note the results of similar transplantation into closely allied tissue such as brain and into highly vascular tissue of partially embryonic type such as red bone marrow. In his implantation of isografts it has been found that where the organ has been first removed the graft may live. Thus in dogs in whom the parathyroid has been removed life may be indefinitely prolonged and tetany avoided by the implantation of a parathyroid isograft. In closing I would like again to emphasize the necessity of accurate preliminary reading in experimental work.

Dr. Castle, closing discussion: I took it for granted that every one present was here for the purpose of scientific discussion. I am sorry to learn there is one exception to this. It is very shameful that the value of this paper which has opened so many avenues for discussion has been greatly lessened by a personal attack. True criticism is of the greatest value and is appreciated by the most learned. It is for this we meet and confer together. No one, in discussing a paper, has authority to introduce material which is entirely irrelevant to the subject. I am sorry Dr. Tait has not read sufficient to make it possible for him to talk intelligently, at least in a slight degree, on some of the many phases of this work that have been set forth in the paper I have just read. I agree that every one doing experimental work should have thorough knowledge of the literature pertaining to the subject and it is my extreme pleasure as your colleague to say that I am conversant with all that has been written relative to the pituitary gland since the time Von Michel and Horsley made their primitive surgical attacks on this part of the animal economy.

Harvey Cushing, who has done by far the most praiseworthy work in the experimental surgery of the hypophysis cerebri, corroborates our judgment and technic, which speaks well for our carefully planned procedures. It is well known by all who read intelligently that the most simple problems relative to the pituitary gland are not solved. Thus we find Paulesco and Gemelli diametrically opposed in their views as to the most obvious question concerning the gland, viz: its essentiality.

If Dr. Tait would spend his time in thoughtful, scientific reading instead of malicious criticism of those doing commendable work it would not be necessary for him to make remarks that bring shame upon your society and disgrace upon himself.

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CLINICAL VALUE OF THE ARNETH METHOD OF BLOOD EXAMINATION.*

LEROY H. BRIGGS, M. D., San Francisco.

For some reason the method of leukocyte examination of Arneth has received surprisingly little attention in this country in the eight years which have elapsed since its introduction, and it is with the hope of arousing interest in what appears to be a procedure of value that this paper is presented.

There is no intention of giving a detailed review of the literature, nor is there occasion for such, owing to the publication last year of a complete résumé of the subject by Schilling-Torgau¹ which carries a full bibliography to date and is a most valuable contribution. However, it is perhaps advisable to present as concisely as possible Arneth's ideas, and to make mention of some of the more important modifications and applications of the method.

Arneth's theory is probably known to you all. He supplements the ordinary leukocyte count with a more detailed study of the neutrophilic cells. These he divides into five chief classes according to the number of divisions or "pieces" of the nucleus. His assumption is that the younger the cell the fewer nuclei will it contain (it being descended from the uni-nuclear myelocyte), and that as it

ages the nuclei divide and become more numerous. He further assumes that the older the cell the better its protective ability in combating infections and toxemias. When such conditions do occur, the older cells (with many nuclei) are destroyed first and their places taken by younger generations (with fewer nuclei). From a study of the normal he found that the percentages of the cells in the five classes maintain a strikingly constant ratio to each other, the middle classes, with two, three and four nuclear parts, containing the bulk of the cells, and the first and fifth comparatively few. In the majority of infections he found a decided increase in the number of cells in the first and second classes, with a corresponding decrease in the others. This change in the character of the neutrophilic blood-picture he called a "shift to the left"—"die Verschiebung des neutrophilen Blutbildes nach links." In tuberculosis, to which he gave especial study, he observed that the more severe the infection the more marked was this shift to the left, and concluded that as a prognostic indicator the neutrophilic blood-picture was of peculiar value.

His first report, in the form of a monograph² based on some 276 blood examinations, appeared in 1904, immediately after a preliminary communication.³ During that year he published a number of papers, containing tables selected from his monograph, showing the neutrophilic changes found in carcinoma,⁴ in cases just before death,⁵ in pregnancy and the puerperium,⁶ and in artificially induced infections and intoxications in rabbits.⁷ In 1905 his second monograph appeared, embodying his findings in tuberculosis.⁸ His papers of the next five years, with the exception of some work on leukemia, were devoted to controversial discussions with his opponents.

With these discussions we are not concerned here. One of the chief arguments against Arneth's idea was that the polynuclear appearance of the neutrophils was an artifact due to the breaking up of the nucleus in the fixation and staining. The constancy of the normal ratio, together with the work of v. Bornsdorff,⁹ Gothein,¹⁰ Lewis,¹¹ and others, has disproven this. Whether the true age of the neutrophile can be told from the configuration of the nucleus is less certain, although all are unanimous in conceding that the youngest normal neutrophile in the blood is one having a single horse-shoe shaped nucleus. Work done along the line of determining the relative phagocytic ability of the five classes has not been productive of any consistent results.

There are three chief modifications of the method: the original Arneth, the nuclear count of Wolff, and the estimation of the first class alone.

The original classification of Arneth was composed of some twenty subdivisions of the five classes and naturally proved too cumbersome for practical use. These subdivisions have been abandoned and the division into the five main classes is the method principally adopted at present.

The nuclear count of Wolff¹² was the calcula-

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

tion of the number of nuclear particles in 100 neutrophils. This has received but little attention and is not approved of by Arneth¹³ who demands a closer analysis of the nuclei than can be obtained in this way.

The third modification, which is one of value, consists in the estimation of the percentage of the cells of the first class only. Changes in the blood-picture are earliest shown here, and in consequence many hold it to be the only class of importance and disregard entirely the others. Sonnenburg and Kothe and their followers^{14,20}, and independently Zangemeister and Gans,²¹ advocate this method and use it advantageously in surgical conditions. Pappenheim and Schilling-Torgau advise a closer study and a sub-division of this first class.

One serious disadvantage with the original Arneth method is the difficulty in recording results graphically. Arneth realized this and took what he called an "index"—which was the sum of the first and second classes—as a standard for comparison. The index used more widely in this country is one proposed by Bushnell and Treuholtz²² (although Lewis¹¹ claims priority) which is the sum of the first, second, and one-half the third classes. The two modifications mentioned above aimed to overcome this difficulty by giving results in the form of a single number which could be readily charted. The users of the last method particularly, have shown by curves the relationship existing between temperature, pulse-rate, total white-count, and percentage of cells of the first class, plotting the respective curves together in a very simple manner, beautifully shown in their papers.^{15 16 17 19}

Observations on the appearance of the Arneth phenomena in disease have extended over a fairly wide range, but the work most promising in the way of practical results has been that done on tuberculosis and on appendicitis.

With but one exception all who have studied the nuclear count in tuberculosis are agreed with Arneth that a shift to the left is a constant finding, and that the estimation of this shift from time to time affords considerable prognostic aid. Solis-Cohen and Strickler,^{23,25} alone of all observers, report results at variance—an increase in the shift to the left when the patient is improving. In this country excellent papers have come from Klebs and Klebs,²⁶ Bushnell and Treuholtz,²² Minor and Ringer,²⁷ Williams,²⁸ and Margaret Reed Lewis.¹¹

The work on appendicitis¹⁴⁻¹⁸ has come mainly from one clinic, that of Sonnenburg in Berlin, although papers from other sources are beginning to appear.²⁰

Observations in other conditions have been scattering, although mention should be made of a study of the neutrophils in 17 cases of severe malaria by Gothein¹⁰, and of the work on typhoid by Bucalossi.²⁹

The present work was undertaken wholly from the clinical side to determine, first, the occurrence of the phenomena as reported, and secondly,

whether practical use could be made of such findings. As far as the first question is concerned, the results confirm beyond a doubt the contentions of Arneth and the majority of others in regard to the characteristic changes in the blood-picture. For the answering of the second question, more data is necessary.

The question of the use in diagnosis of such neutrophilic study has been purposely omitted for the present. All writers who mention this point at all state that little if any benefit can be derived from it.

The material so far has consisted of 266 counts, made on 117 individuals, including normals, tubercular, typhoid, pyogenic and malarial infections, and miscellaneous medical conditions. These will not be given in full but the results referred to briefly, with occasional examples.

Technic. White counts were done in the usual way, and thin cover-glass preparations made, blood being obtained from the lobe of the ear. Hasting's stain was used, although any of the other modifications of the Romanowski would do as well, a clear nuclear differentiation being the chief desideratum. Differential counts were made on the basis of at least 500 cells, the divisions being: neutrophils, eosinophils, basophils, large mononuclears and lymphocytes, transitionals being counted with the large mononuclears. Arneth counts were uniformly made on a basis of 200 neutrophils, 100 being counted from each of two stained smears and the results averaged. The five chief classes of the original Arneth were adopted, the subdivisions being disregarded, while the index was that used by most workers in this country, the sum of the first, second and one-half the third classes. In counting it is most important that a standard be set and closely adhered to, so that the results may be comparable. Nuclei connected by anything more than the finest thread were classed as single. Nuclei plainly superimposed upon another were counted separately, and where doubt existed it was considered better to not tabulate the cell at all. As a matter of fact, with careful focusing in thin, well-stained preparations, the percentage of cells which cannot be classified is very small.

Normal. The normal as determined by Arneth originally was in round numbers:

| I | II | III | IV | V |
|---|----|-----|----|---|
| 5 | 35 | 41 | 17 | 2 |

and with a few striking exceptions the majority of writers report formulae of about this type. In the present work the normal picture was obtained from 30 counts on 17 persons apparently in perfect health, both male and female, between the ages of 20 and 50. In most instances two estimations were made, from two to ten months apart. The results are as follows:

Averages.

| Whites | Neutrophils % | I | II | III | IV | V | Index |
|--------|---------------|------|-------|-------|-------|------|-------|
| 8,796 | 57.55 | 3.52 | 30.08 | 48.26 | 16.55 | 1.59 | 57.73 |

or in round numbers, an Arneth neutrophilic formula of:

| I | II | III | IV | V | Index |
|---|----|-----|----|---|-------|
| 4 | 30 | 48 | 16 | 2 | 58 |

Extremes.

| Whites | Neutro- philes % | I | II | III | IV | V | Index |
|--------------|---------------------|-----|---------|---------|------|-----|-------------|
| 5,100-13,800 | 44.6-72.6 | 1-7 | 21.5-37 | 41.5-55 | 8-22 | 0-4 | 51.25-65.25 |

A striking point was the absence of any great degree of variation in these counts, a fact which is contrary to the observations of Williams,²⁸ who found wide extremes in 100 counts on 55 normal persons, although his average picture closely resembled the classical one.

Tuberculosis. Sixty counts were made in 30 cases, chiefly ambulatory attending the Alameda County Tuberculosis Clinic. The majority were pulmonary, although three glandular and one peritoneal are included. In the ordinary pulmonary cases counts were made not oftener than a month apart, as it was found that at shorter intervals the changes were not pronounced enough to be relied upon. This may be seen in the tables of Lewis,¹¹ who made counts as often as every three or four days.

Every active case showed an increase in the cells of the first two classes, or in other words, a shift to the left. The degree of this shift seems to depend upon the activity and severity of the infection rather than upon the actual amount of lung damage.

Two cured cases, showing evidences of at one time wide lung involvement, had pictures with no deviation from the normal. Of seven cases which showed marked shifting, that is with indices over 90, three have died, (the only deaths in the series) and three of the others have very bad prognoses, while the seventh is slowly improving, both clinically and in regard to the blood-picture as well, his last count (April 4) having an index of 80. Three other cases in which bad prognoses would be given clinically, although two were only seen but once, had indices of 86, 85 and 83.

The observations are of course too few to permit of any conclusions at present, but they would seem to bear out what has been found by others: that the neutrophilic examination of Arneth is of undoubted assistance in judging of prognosis, and that as a rule, the greater the shift to the left, the more serious is the case. Whether it is, as Lewis enthusiastically puts it, "a much more delicate and certain indication of the patient's condition than any other clinical sign" remains to be seen.

Typhoid. Sixty-three counts were made in 9 cases, mainly from the wards of the University of California Hospital, the counts being made in most instances once a week. Every case showed a very marked shift to the left, heaviest in the earlier weeks, persisting throughout the course, and gradually approaching normal as recovery ensued. If a relapse or exacerbation occurred the shift to the left immediately became more pronounced. These changes in typhoid are perhaps more distinctive than in other infections on account of their in-

tensity. The tremendous increases in the cells of the first class, such as are regularly found here, are not seen in other conditions except under the gravest of circumstances.

The course of the disease apparently cannot be predicted from the initial counts. For example, in the mildest case of the series, the first count, taken at the beginning of the third week, showed:

| Whites | Neutro- philes % | I | II | III | IV | V | Index |
|--------|---------------------|----|----|-----|----|---|-------|
| 10,700 | 60.4% | 70 | 26 | 4 | 0 | 0 | 98 |

while in another, running a much more severe course, the initial count taken in the second week, showed:

| Whites | Neutro- philes % | I | II | III | IV | V | Index |
|--------|---------------------|----|----|-----|----|---|-------|
| 9,300 | 77% | 60 | 34 | 6 | 0 | 0 | 97 |

Whether or not the method will enable us to foretell the advent of a relapse can only be decided by a long series of observations. From the work done so far it does not seem to be of great practical value in typhoid, although of exceeding interest hematologically.

Table I shows the typical course of the neutrophils in an ordinary case.

TABLE I.

U. C. H., No. 3844. Typhoid. Woman, age 40. Fairly severe course, no relapses, complicating mastitis in 5th week.

| Date | Whites per cmm. | Neutro. % | Arneth classes— | I | II | III | IV | V |
|----------|--------------------|--------------|-----------------|------|------|------|-----|-----|
| 10/30/11 | 5,600 | 79.8 | | 63. | 43.5 | 3 | 0 | 0.5 |
| 11/10/11 | 6,200 | 60.4 | | 45.5 | 41 | 13 | 0.5 | 0 |
| 11/20/11 | 7,500 | 56.4 | | 40 | 47 | 13 | 0 | 0 |
| 11/27/11 | 8,200 | 62.2 | | 36 | 50.5 | 13 | 0.5 | 0 |
| 12/ 4/11 | 9,400 | 56.2 | | 42.5 | 49 | 8.5 | 0 | 0 |
| 12/11/11 | 11,600 | 62.2 | | 22.5 | 55 | 15.5 | 3 | 0 |
| 12/18/11 | 7,900 | 45.0 | | 21 | 52 | 26 | 0.5 | 0.5 |
| 12/27/11 | 11,300 | 49.8 | | 9.5 | 48.5 | 34.5 | 7 | 0.5 |
| 1/ 5/12 | 11,300 | 54.0 | | 5 | 38 | 47 | 8.5 | 1.5 |

Remarks.

| Index | Remarks. |
|-------|-------------------------|
| 98 | Probably 3rd week. |
| 93 | Ordinary course. |
| 93.5 | Mastitis. |
| 93 | Temp. normal. |
| 95.75 | Temp. 2 days last week. |
| 87.25 | Temp. normal. |
| 86 | Temp. normal. |
| 75.25 | Up in chair. |
| 66.5 | Discharged. |

Pyogenic Infections. In pyogenic infections, such as cellulitis, erysipelas and furunculosis, a study of 40 examinations in 7 cases showed that a shift to the left was constant, and proportionate to the severity of the infection. In every case the neutrophilic picture returned to normal on recovery. In two cases in which normal formulae were found previously, the sharp shift to the left following the onset of the infection with the gradual return to normal was most striking.

In ten other cases of miscellaneous infections shifting to the left was present in all. However, the majority of these were seen but once or twice and the blood consequently not studied systematically.

The shifting to the left of the neutrophils in this group of infections is not otherwise characteristic, and in the way of prognosis does not seem to give any information additional to that which can be gained from a proper clinical study of the case.

Malaria. Twelve cases were observed, 8 tertian and 4 estivo-autumnal. A shift to the left was present in all, in agreement with Gothein,¹⁰

and contrary to the findings of Kagan,³⁰ who reported no change. The extent of the shift varied directly with the severity of the infection, the estivo-autumnals showing a greater degree than the tertians, although the most pronounced change of the series occurred in a very severe double tertian infection. The average picture, at the beginning of quinine treatment, of 8 tertian was:

| I | II | III | IV | V | Index |
|----|----|-----|----|---|-------|
| 22 | 44 | 28 | 5 | 1 | 80 |

and of 4 estivo-autumnal:

| I | II | III | IV | V | Index |
|----|----|-----|----|---|-------|
| 31 | 51 | 16 | 2 | 0 | 90 |

No practical value seems to be attached to Arneth examinations in malarial infections.

Miscellaneous conditions. In 33 cases of various medical conditions, not infections proper, 27 showed normal neutrophilic blood-pictures. Among these were included 7 non-tubercular pulmonary lesions, such as bronciectasis, chronic bronchitis, thickened pleura, etc.; 3 uncomplicated gastric ulcers with the patients in good condition; 3 cases of sarcomata of moderate degrees of malignancy; 1 case of liver and 1 case of cerebral-spinal syphilis; a mild case of Basedow; and several compensated heart lesions. Of the 6 showing a shifting to the left, the most marked was in a severe case of myxedema in which five examinations were made over a period of nine months. An extreme shifting to the left occurred, which has gradually diminished with the general improvement under thyroid, and for which no other cause could be found. In a severe case of myocardial insufficiency a moderate shift appeared, with a return to normal when compensation was again established. An advanced case of carcinoma of the uterus and bladder showed moderate shifting. In the other three cases no diagnosis was made, although the possibility of a tubercular infection was strong in all three.

It would appear from a survey of these cases that the neutrophilic alterations are more a feature of the infectious diseases than of the non-infectious, unless the latter are characterized by severe intoxications.

Conclusions. In so far as such a limited number of examinations will admit, conclusions may be offered as follows:

1. The nuclear formula of the neutrophils, the so-called "neutrophilic blood-picture," in the normal, agrees closely and constantly with that found by Arneth and many other workers.
2. In tubercular, typhoid, pyogenic and malarial infections, a deviation from this normal is regularly found, the so-called "shift to the left," consisting of an increase in the cells with fewer nuclear units and a corresponding decrease in the cells with many.
3. The degree of this shift appears to be roughly proportionate to the severity of the infection, except in typhoid, where it is uniformly present to a marked extent, irrespective of the individual case.
4. In tuberculosis such changes in the neutrophils seem to offer a distinct aid in prognosis, al-

though the reliability of this needs further confirmation.

5. In typhoid, pyogenic, and malarial infections such changes do not at present appear to be of much practical value.

6. However, in the light of these constant and regular changes in the neutrophils in disease, a blood examination should never be considered complete without an estimation of these cells according to the method of Arneth.

It gives me great pleasure to thank the members of the medical staff of the University of California Hospital for the privilege of using the material in their wards.

Discussion.

Dr. G. H. Evans, San Francisco: Any paper or contribution that throws any light on this very important question of Arneth's findings should be welcomed. There has been nothing in the work on tuberculosis which has brought forward more varied opinion than Arneth's work. I have become very pessimistic regarding the value of this work, because I have followed it out, particularly in cases of tuberculosis, and so far I must say I have found it without any practical value. There has been in favorable cases as frequently a shifting to the left as to the right and in one case which ran a rapidly fatal course Arneth's findings showed a decided shifting of the polynuclear scale to the right. I have a number of these cases where the work has been thoroughly tabulated and I hope to present them later but my findings have been very decidedly averse to those of Arneth and others.

Dr. F. M. Pottenger, Los Angeles: The method of Arneth has interested me greatly since its first publication and I have been very much surprised to note that it has not received more attention at the hands of the profession generally. In tuberculosis our work at the Pottenger sanitarium would indicate that the clinical prognosis and the results as indicated by Arneth's classification of the leukocytes tallies closely. The evolution of the leukocytes may be studied in the incubator. Dr. J. E. Pottenger has made numerous observations, preparing several specimens from the same blood and after keeping them in an incubator examining them at given periods of time, say ten minutes, fifteen minutes, thirty minutes and an hour, and by this method he has shown that there is a tendency for the leukocytes to change from the lower to the higher classes. The phagocytic ability of the leukocytes seems to increase with age. I was interested in hearing Dr. Evans say that he had found the Arneth method unreliable. It is true that the method requires confirmation and that a great deal more work should be done upon it. It is surprising that different workers seem to arrive at such different results but I think the difference is one of method. The slides should be prepared in the same manner and under the same conditions in all instances where comparative observations are to be made.

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A CASE OF ACROMEGALY WITH THROMBOSIS AND EMBOLISM.*

By W. B. COFFEY, M. D., and W. T. CUMMINS, M. D., San Francisco.

History: Mr. A. C. S., aged 39, a clerk, was admitted to the Southern Pacific Hospital on November 2, 1911. His father died of "spinal trouble" and his mother of gastric carcinoma. Two sisters are dead—one at childbirth. Three brothers and three sisters are living and well. Patient denied venereal infection, stating that his habits were good and that he had always enjoyed good health. However, at the age of twenty-five he felt that he was still growing—that his hands and feet were increasing in size. Shortly before admission a medical friend had diagnosed the condition as one of acromegaly based only upon anatomical changes, there having been no subjective signs of hypophyseal disease. The condition for which he entered the hospital was hemorrhoids and this had appeared one year before with blood-streaked stools associated with which there developed constant dull pains over the hips.

Examination: The patient appeared well nourished. The maxillary bones were large and gave the face a massive appearance, while the cranium appeared small in comparison. The hands and feet were unusually large. There were no ear symptoms; the nose and mouth were normal. A central scotoma was found in each eye. The thorax and abdomen were negative. No vasomotor disturbances were elicited. Rectal examination showed external and internal hemorrhoids with prolapse.

Urinalyses: 1. November 10, clear, yellow, Sp. gr. 1025. Acid. No albumin nor sugar. Microscopically negative. 2. November 15, cloudy, reddish brown. Sp. gr. 1030. Acid. Albumin + +. No sugar. Large number of casts of all types, including blood. Leukocytes, 30,000 cells.

On November 11 Dr. Coffey operated upon the hemorrhoidal condition by using the cautery, the time consumed being ten minutes. For several hours afterwards the patient showed maniacal excitement and was restrained with difficulty. Within thirty-six hours the temperature rose from 98.4° to 101.6° and this elevation was maintained until the following day (November 13). The maximum for the ensuing day was 100.4° and this was followed by a steady decline. Throughout the pyrexia the pulse rate did not rise above 90. General abdominal pain was the only complaint. Death occurred on November 15.

Autopsy Report: Well-developed adult. Face, hands and feet unusually large. Joints of fingers and toes were large, but there was no evidence elsewhere of osteophytes. Vertebral column was apparently normal. No thyroidal enlargement. Rigidity was marked in the arms; lividity, in dependent parts. There were no scars, eruption, nor bruises. Generalized jaundice was present, especially over trunk and lower limbs. The penis and scrotum were edematous and the latter on the right side showed early gangrene. No urethral discharge. The anus showed evidences of recent operation, but no suppurative changes.

The peritoneum was normal except for the pelvis, where there was marked congestion and in places hemorrhage. There was a moderate increase of clear, yellow fluid in the peritoneal sac. The transverse colon had a very long mesentery and reached slightly below the umbilicus. The stomach and other abdominal viscera were normal in position.

Spleen was twice its normal size (150 grams). Color was slaty gray and consistency firm. There was a small patch of chronic perisplenitis. Cut surface was granular, moist, dark brown and showed a moderate amount of blood. Capsule stripped with difficulty. The follicles were prominent and there was trabecular fibrosis. (Culture taken from spleen.) Liver was moderately increased in size but of normal shape. Color was dark brown; the consistency firm. Capsule stripped with difficulty. Cut surface was granular with markings of fibrosis and passive congestion. Gall bladder was apparently normal and ducts patulous. Stomach was moderately dilated; otherwise normal. Small intestine was normal, but the colon showed considerable dilation and congestion. Appendix was apparently normal. Pancreas showed some increase in consistency and moderate congestion. Left kidney was about double the normal size (150 grams) and was pale red and flabby. Capsule stripped very readily. Cut surface was smooth and moist with considerable cortical increase. Pyramids were prominent with congestion. Ureter was apparently normal. Adrenal was soft, yellow and cystic. Right kidney, ureter and adrenal were identical with left. Bladder contained small amount of cloudy urine. Wall was considerably thickened and showed moderate diverticulation. Right testicle and epididymis were markedly congested and softened, especially the latter. (Generative organs on left side not removed.) Sper-

* Read before the California Academy of Medicine, April 22, 1912.

matic plexus was markedly congested and in many places thrombi were found. (Cultures taken.)

Left pleural sac showed dense adhesions over upper lobe with almost complete obliteration of sac. Over lower lobe there were a few dense adhesions. No increase of fluid. Left lung was uniformly crepitant and normal, except for moderate congestion of lower lobe. Pulmonary vessels were apparently normal. Right pleural sac was normal and lung was similar to left. Pericardial sac was apparently normal. Heart showed a large milk plaque (2 cm. in diameter) over wall of right ventricle. Muscle appeared normal. Coronary sclerosis was moderate. Left auricular and ventricular endocardium, including the adjacent valves, showed some fibrotic thickening. Thoracic aorta, especially in arch, was markedly sclerotic. Thymus was negative. Right inguinal lymph node was about size of lima bean—soft and suppurating. Other superficial and deep nodes were normal.

Brain: Weight 1340 grams. Convolutions were well formed. Meningeal vessels were markedly congested and serous surfaces cloudy and somewhat thickened, particularly over the parietal lobes. Basilar vessels appeared somewhat tortuous and walls thickened. Cerebral vessels were slightly congested. Consistency of cerebrum was normal. Ventricles normal. There was no evidence of hemorrhage nor embolism. Pineal gland, cerebellum, pons and medulla were apparently normal. Hypophysis measured 2.5x2.5x1.25 cm. Weight 4.02 grams. It was about the size of a small horse-chestnut. Color was pale yellow except for a congested vessel on the surface. Consistency was of mush-like, coarsely granular character and upon removal of brain it was found impossible to remove entire hypophysis, a small quantity of thick, cream-like material remaining in sella turcica. These bony parts were of increased size and depth. On account of the consistency of the tissues no differentiation could be made out between the anterior and posterior lobes of the organ. (Spinal cord and thyroid gland not removed.)

Histological Examination: Lungs—There was moderate congestion and many of the smaller blood vessels were filled with emboli composed chiefly of leukocytes. Few alveoli contained corpora amyacea. Heart—Some fibres showed moderate hypertrophy, while others segmentation. Liver—Peritoneal mesothelial cells were large and cuboidal, while the underlying tissues were moderately fibrotic and infiltrated with round cells. Moderate interlobular fibrosis, as well as cloudy swelling and passive congestion, were evident. Pancreas—Moderate fibrosis and congestion were present. Few of the islands of Langerhans were very large; otherwise normal. Kidneys—There was moderate capsular and cortical fibrosis, as well as cloudy swelling. Adrenals—Some cortical cells showed considerable vacuolation. Throughout the sections the three cortical zones were ill-defined. The medulla appeared hypertrophied, the blood vessels engorged and numerous large masses of round cells were seen. Outside the capsules there were several large and small areas of hemorrhage. Cerebrum—The pia-arachnoid showed nodular fibrous thickening to a well-marked degree. The meningeal and cerebral vessels were moderately congested. The nerve cells and glia were normal. (Sections from the frontal, temporo-sphenoidal and parietal lobes.) Cerebellum—Moderate congestion of the meningeal vessels was noted. Pons and medulla normal. Basilar Artery—The lumen was almost wholly occluded by unilateral fibro-degenerative changes in the intima and media. Hypophysis—The sections showed only the anterior, glandular portion and the pars intermedia. Proliferative glandular changes were evident and the blood spaces showed engorgement. The intermediary portion was densely packed with cells, some of which appeared of neuroglial type. Here and there multinucleated cells were seen, while

the chromaffin cells were small in number. A few small masses of colloid were evident. (Tissue fixatives formalin and Müller-formol.)

Clinical Diagnosis: Acromegaly; rectal prolapse with external and internal hemorrhoids.

Pathological Diagnosis: Chronic pleuritis; hypostatic congestion of lungs; corpora amyacea and embolism; chronic localized pericarditis; chronic mural endocarditis, chronic aortic and mitral valvulitis, coronary sclerosis, hypertrophy and segmentation; aortic sclerosis; hydroperitoneum; chronic interstitial splenitis* and perisplenitis; chronic perihepatitis, interstitial hepatitis, cloudy swelling and passive congestion; chronic interstitial pancreatitis; acute parenchymatous nephritis with early interstitial changes; hemorrhage in the adrenals; chronic cystitis; congestion and thrombosis of spermatic plexus; congestion of right testicle and epididymis; edema of scrotum and penis; suppurative inguinal adenitis; chronic leptomenigitis; sclerosis of basilar artery (endarteritis nodosa); adenoma of hypophysis.

Bacteriological Diagnosis: Cultures sterile.

Remarks: The complicating hemorrhoidal conditions with operation claims attention. Upon recovery of consciousness after the short operation the patient manifested great excitement and restraint was necessary. The temperature was disproportionately high as compared with the pulse rate. Four days after operation death occurred apparently from acute nephritis.

The patient presented the classical objective signs of hypophyseal disease without the subjective cranial symptoms which are frequently associated with this disorder. The hypophysis was wholly contained within the sella turcica and there was obviously no compression of the cranial nerves, thus explaining doubtless the absence of the common eye and ear symptoms. Hemorrhages in the adrenals were an interesting associated condition. The chronic leptomenigitis may have been syphilitic in character and this was suggested by the advanced arteriosclerosis without evidences of gout nor history of lead in a patient thirty-nine years of age. Unfortunately no serologic examination was made. Thrombosis and embolism are occasionally seen following hemorrhoidal operations and whether or not the acromegalic condition favored the spermatic thrombosis and pulmonary embolism is not clear, though it has been shown by metabolic investigations that in hypophyseal disease there is an increase in calcium content of the blood (Franchini). Investigations of experimental character have been carried out by ¹Fellner, ²Schickele, ³Frankl, ⁴Hugenin, ⁵Klein, ⁶Freidberg, ⁷Dold, ⁸von Mirto, ⁹Patta-Decio, and ¹⁰von Franqué, to determine the action by intravenous inoculation of tissue extracts (uterus, ovary, corpora lutea, placenta, myoma, carcinoma, sarcoma, chorioepithelioma, etc.) in the production of thrombosis; though the results are not uniform. It has been shown in some cases that operations upon organs and certain tumors have been followed by thrombosis (by some ascribed to liberation of thrombokinas), but the possibility of infection was apparently not eliminated in all of these. Spontaneous necrosis of tumors and other tissues has likewise induced thrombosis.

Finally, in the light of investigation upon the alleged thrombokinet action of organic tissues, one should consider the possibility of thrombosis in operations upon highly vascular and varicose tissues, especially when coincidentally there is disease of an organ which may bring about an increase in calcium content of the blood.

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THE PRESENT AND FUTURE OF THE EYE AND EAR SECTION OF OUR STATE MEDICAL SOCIETY.

By WILLIAM H. DUDLEY, M. D., Chairman, Los Angeles.

The question of forming sections out of the large medical societies, since 1879, when the ophthalmic surgeons drew out of the American Medical Association, and held separate meetings, has found popular acceptance in the minds of physicians trying to do the best work along special lines; and as it was the ophthalmic surgeons who first united to form a separate section in the American Medical Association, so it has been since in the state societies, or rather, the eye surgeons joined by the ear, nose and throat surgeons, who have been the first, as a rule, to avail themselves of the privilege of working by themselves, not to the exclusion of the general, or other special practitioners; but by combining their efforts, they have been able to achieve far better results than could have possibly been accomplished in the older method of all working together in the general section. It is possible, however, that this method may not be without its disadvantages, for while it does certainly deepen the channel in which we work, it may also contract the limits of our scientific usefulness.

We must, however, all admit the depth to which all special lines have developed within the past few years, that none of us is longer able to grasp all that is being taught at the present time in medical science, hence, if we would do the best work, it must be along special lines.

Since the state societies began to form special sections, no less than ten have joined in this form of division, and one, viz., Arkansas, I am informed is arranged somewhat after the American Medical Association, except that instead of holding the meetings simultaneously, the different sections hold their meetings in order of sequence, having no general scientific meetings.

Recognizing the advantage of this form of segregation, the eye, ear, nose and throat surgeons, members of the California State Medical Society held a meeting at the time of the state meeting two years ago, elected a chairman and secretary to get up a scientific program, and make arrangements for a meeting the following year, and we all know that a successful meeting was held last year at Santa Barbara. Again a chairman, vice-chairman and secretary were elected to arrange for a second meeting to be held this year, but no other business was transacted so far as I am aware. That the secretary, to whom the credit of the success of this meeting chiefly belongs, has been

awake since the last meeting of the section our present program testifies in eloquent terms.

Soon after being elected chairman last year, it was discovered through correspondence with the secretary of the state society, that in reality, this section had no existence, which statement, if true, convinced the chairman that an effort should be put forth to bring it into existence. If the section were simply an embryo, it must be near the end of gestation and arrangements should be made for a delivery, so to speak. Inasmuch as section viii of the constitution of the state society provides for the formation of sections, it was felt that a resolution should be presented to the house of delegates at this meeting, calling for the recognition of this section, and defining its rights and privileges. Permit me to state that such a resolution has been prepared, and if it meets with the approval of the members at this meeting, it will be presented, and its adoption be asked.

The chairman will also be pleased at the proper time, to entertain a motion for the appointment of a committee for the purpose of drawing up a constitution and by-laws, for the proper government of this section, the same to be presented at a later meeting, for consideration and adoption.

Now it appears to the chairman that we have as members of the state society, and consequently, members of this section, many men of eminent scientific attainments, men to whom we may look for achievements in the line of scientific investigation, which if properly presented at our state meetings will place this state society second to none in this country in results obtained. We have clinical advantages here peculiarly well adapted to investigation along certain lines which no other state can claim. Physicians from all over the East are sending patients to us almost without number, with complications in our line of work, which if grasped, give us opportunities unsurpassed, which we should investigate, recognize, and in this section work out the results.

These patients not only come to us from the East, but many also from the West, from the islands of the sea, from the North and from the South, in native and alien, and to successfully comprehend the conditions presented, demands the best that is in us, pathologic, diagnostic, surgical and therapeutic, and the results of our work, properly presented at our annual meetings, will place the eye and ear section of the Medical Society of the State of California in an enviable position among the similar sections of the societies of our country.

OCULAR DISTURBANCES CAUSED BY THE CINEMATOGRAF.*

By MORTON E. HART, M. D., San Francisco.

Ocular disturbances due to the cinematograph have, up to the present time, received practically no mention in medical literature. It seems strange that this should be the case, for no doubt it has

* Knowledge and Scientific News (London).

fallen to the lot of almost every oculist, particularly in the large cities to have seen and treated many patients suffering from this new disease. And there are very good reasons that there should be ocular disturbances from this new plaything of the people.

The cinematograph has for its principle the persistency of luminous impressions on the retina. The impression made by light on the retina does not cease the instant the light is removed, but persists about one-eighth of a second. If the luminous impressions are separated by a less interval, they appear continuous. In the cinematograph projection, the pictures are thrown upon the screen at the rate of sixteen a second and though this apparently shows continuous motion, such is not the case. An infinitesimal period of motion is lost between each successive picture in the short period the lens is closed to admit of the successive section of film being jerked into place behind the lens and although the eye does not realize the motion that is lost, yet it still has an impression of lack of continuity, colloquially described as "flicker," attributed to cutting in and out of the shutter, but which is in reality, nothing more than the sharp line of demarcation between each period of movement, as represented by its individual instantaneous picture.*

The average cinematograph performance lasts from three-quarters of an hour to an hour and is it a wonder that we get ocular disturbances after subjecting such a sensitive membrane as the retina to such fatigue. These successive excitations exhaust the sensibility and disturb the physiological function of the retina.

The ocular disturbances, classified under the generic term of "cinematophthalmia," are really disturbances of vision due to traumatism, and are matters of degree. The process is the same in all of the conditions. There are those cases which are merely transient in their disturbance. When the picture is first thrown on the screen, the individual is inconvenienced by photophobia and a few tears. He closes his eyes and these symptoms soon pass away after a few seconds of repose, and the retina accustoms itself to the new condition of affairs. A further degree is of longer duration; the retina cannot adopt itself to the fatigue imposed on it and each time the individual opens his eyes, the symptoms reappear. It is impossible to continue the spectacle. After leaving the theatre, the disturbance still persists and in addition to the mild photophobia and lachrymation there ensues a slight reddening of the conjunctiva. A few hours, or at least a night's rest, will return the eyes to their normal tone.

In the third degree of disturbance, the symptoms are more severe and the return to the normal somewhat prolonged. Here the photophobia, lachrymation and conjunctivitis persist for several days and in addition, we have a smarting and itching of the eyes.

In the very severe cases, besides the inflammation of the conjunctiva with its attendant symptoms of lachrymation and photophobia, we have

very definite asthenopic symptoms, both accommodative and retinal—the former due to the ciliary strain and the latter due to a hyperesthesia of the retina. The distant vision remains normal. Under examination these patients are found to have no error of refraction or lesion of the fundus. A case in question may here be cited:

E. R., female, age 16, was brought to me with the following complaint: Eyes burned and itched and the lids were red, particularly at night. Reading was impossible on account of blurring of the page. No headaches. This condition would clear up after a night's rest, to reappear again at frequent intervals.

On examination a slight reddening of the conjunctiva was found and under a mydriatic an error of one degree of hyperopia, which was corrected. The near point was normal, showing no error of accommodation. Of course this was tested before using the mydriatic. No lesion of the fundus was found. Unfortunately the patient could not be seen during an attack.

After wearing the glasses for several weeks, the patient reported, stating that the condition had not improved. She was then closely questioned and it was found that it was her habit to attend a moving picture show at least four times a week after school and unknown to her mother. She was forbidden this amusement and the condition entirely cleared up.

Fortunately these ocular disturbances are not serious and will clear up under simple collyria and rest.

The question will naturally arise, how can we do away with the cause of the trouble?

First: The films must be perfect and free from all imperfections. We have all noticed the scratches on the pictures, particularly at the end of the reels, due to careless handling. When we realize that the average picture thrown on the screen is about 97,000 times larger than the original size of the individual film, we can appreciate that even the smallest blemish on the films will be tremendously magnified on the curtain and will have a correspondingly bad effect on the eyes.

Second: The illumination must be steady, must not vary and must neither be too bright nor too dim, for this causes fatigue.

Third: The speed with which the films are turned must be regular. Any irregularity will have a tendency to cause ocular fatigue.

Fourth: The position of the spectator is very important and should receive proper regulation at the hands of the authorities. First of all, there should be no seats placed at the sides of the auditorium. Every seat should be in direct line with the curtain. This will do away with the distortion of the picture. Anyone who has had the experience of sitting on the side, can appreciate the intense strain and fatigue placed on the eyes.

No seat should be placed nearer than twenty feet from the screen and further if practicable, depending upon the size of the picture on the curtain. This will do away with any accommodative effort on the part of the spectator and thus will reduce the fatigue to a minimum. The nearer the screen the greater the fatigue so the seats at the rear of the auditorium are the best.

The effect of the cinematograph on the eyes finally depends upon the individual himself. Some persons can attend daily without evil results while others cannot stay through a single picture without ocular fatigue. This depends to a great extent upon the nervous predisposition and those with this idiosyncrasy should remain away from the cinematograph.

APPENDICITIS: THEN AND NOW.

By JNO. C. KING, M. D., Banning.

I report the following case merely as an illustration of the change that has occurred during the past thirty years in the attitude of the profession toward appendicitis. In the summer of 1880 I attended a case of what we then called peri-typhilitis. An abscess formed. The patient became very ill. I requested a consultation with a view to operation. The consultant, an able man of large experience, decided that operation was unjustifiable and advised ointment of iodide of potassium, well rubbed in. Forty-eight hours later, feeling that operation was imperative, I sent to Cincinnati for a well-known surgeon, professor of surgery in a college there. Upon examination he declared the man would die under any circumstances; that he would not risk his reputation by operating; that aspiration of the pus was the only thing good surgery demanded. (He kindly offered to send me an aspirator.) The patient was becoming septic; so, after another forty-eight hours, I insisted upon opening him. He gave consent. I asked a number of physicians to give ether, but, although several of them had anesthetized patients for me for other purposes, none would give ether in this instance, deeming it improper to attempt operation. I finally told the man to get another doctor; that I felt he would die unless the pus could be removed; that none of my friends would assist me in doing what I thought needful. He replied that I could go ahead without an anesthetic; that he could stand it if I could. The patient's brother had threatened to kill any one who would attempt to cut him; so, while his wife stood guard at the door, I cautiously opened the abscess. It is difficult to realize that what we now deem so simple and necessary a procedure should then have been considered so absolutely wrong. The tension in the abscess was such that the pus spurted up not less than an inch when the knife reached it. I evacuated all I could and dressed the wound. Before my return the next day, one of my colleagues, a leading man, visited the patient unbidden, removed the dressings and examined the wound, notwithstanding the protest of the wife. He declared the man would die; that I had been guilty of malpractice; that he would be glad to be called upon as a witness in the prosecution that he knew must follow; that he had taken the liberty of examining the patient before death with that end in view. A year ago Dr. T. B. Wright, of Pasadena, brought to me a message from the patient, Col. M. V. B. L., of Circleville, Ohio, to the effect that he was still living. This story is amusing and almost incredible now, but thirty-two years ago it meant a real battle for a very young and fairly ignorant surgeon.

THE CALIFORNIA STATE TUBERCULOSIS COMMISSION.*

By GEORGE H. KRESS, M. D., Los Angeles, Chairman of the Commission.

The particular reason for giving the California State Tuberculosis Commission a place on this

morning's program was to officially and briefly call to the attention of the members of the State Medical Society, somewhat of the nature of this newly formed commission and of some of the things it hoped to do.

As you all know, the last legislature appropriated five thousand dollars, to be spent by a special tuberculosis commission to be appointed by the California State Board of Health, this commission to use this money to "ascertain the effects of localities, employments, conditions and circumstances on the health of those developing tuberculosis, and to determine the best means of eradication thereof."

After a good deal of preliminary correspondence by Dr. Wm. F. Snow, the State Health Board Secretary, with all the anti-tuberculosis societies and others known to be interested in the prevention and cure of tuberculosis in California, the State Board of Health decided to appoint a State Tuberculosis Commission consisting of an executive committee of five and an advisory board of fifty.

The State Board of Health appointed on the executive board of five the following persons:

Dr. C. C. Browning of Los Angeles, Miss Katherine Felton of San Francisco, Dr. R. G. Broderick of San Francisco, Mr. A. Bonnheim of Sacramento, Dr. George H. Kress of Los Angeles, chairman.

The executive board held its first meeting at Sacramento last fall and it was then decided, in joint session with the State Board of Health, that the local headquarters for the work of investigation should be the office of the State Board of Health at Sacramento, where access could be had to all the vital statistics of the state, and where the other trained assistants of the State Health Board as well as the special employees of the Tuberculosis Commission could be under the constant supervision of our efficient State Health Board Secretary, Dr. Wm. F. Snow.

It was also decided that the Advisory Board of fifty prominent physicians and laymen interested in the prevention of tuberculosis, should be divided into ten sub-committees, each of which sub-committees was to have as its chairman one of the members of the Executive Committee, the idea here being to centralize the responsibility of the actual work of the members of the Executive Board, so that at the quarterly meetings of that Executive Board it might be possible to have a first hand knowledge of the work in progress.

The divisions of these ten special lines of investigation and the personnel of the complete commission, are as follows:

1. Institutional Activities: Administration. Dr. Browning, chairman.
2. Institutional Activities: Construction. Dr. Browning, chairman. The construction and administration of sanatoria, hospitals, dispensaries, camps, etc., are included in the work of these committees as well as home treatment and general prophylaxis.
3. School Construction and Health Administration of Schools. Miss Felton, chairman.

* Report to the annual meeting of the Medical Society of the State of California at Del Monte, Cal., on April 17, 1912.

4. Housing Conditions. Miss Felton, chairman. The work of these committees refers to open air and out-door schools, medical inspection of school children; also, general housing conditions—in homes, tenements, factories, hotels and lodging houses.

5. Sociologic and Economic Conditions. Dr. Kress, chairman.

6. Legal Procedure. Dr. Kress, chairman. Special attention will be given by these committees to statistical work, showing the relation of tuberculosis to daily life, and economic and sociologic conditions. The gathering of legal information and the advising of the Executive Board regarding proposed legislation, based upon the experience of other commonwealths and upon present conditions in this State, will be a duty of these committees.

7. Scientific Problems. Dr. Brodrick, chairman.

8. Educational Measures. Dr. Brodrick, chairman. The study of scientific data relative to human and bovine tuberculosis, their prophylaxis, etiology and methods of transmission; and the education of the public by means of literature, press reports, sermons, exhibitions, demonstrations and the like, will be undertaken by these committees.

9. Industrial and Commercial Problems. Mr. Bonnheim, chairman.

10. Registration and Disinfection. Mr. Bonnheim, chairman. These committees will take up an occupational investigation of tuberculosis and will study the problems dealing with transportation, fumigation, reporting of cases and deaths, proper disinfection, etc.

The personnel of the ten committees is as follows:

1. Institutional Activities: Administration. Dr. Chas. C. Browning, chairman, Dr. W. Jarvis Barlow, Dr. Robert A. Peers, Dr. Frederick W. Hatch, Miss Margaret B. Curry.

2. Institutional Activities: Construction. Dr. Browning, chairman, Dr. Edward von Adelung, Dr. Gayle G. Moseley, Dr. Chas. H. Whitman, Mrs. Samuel Brust, Mr. John E. Hoyle.

3. Construction and Health Administration of Schools. Miss Katherine Felton, chairman, Dr. N. K. Foster, Dr. Geo. F. Reinhardt, Prof. J. H. Francis, Mrs. M. W. Kincaid, Dr. Richard G. Boone.

4. Housing Conditions. Miss Katherine Felton, chairman, Miss Alice Griffith, Rev. Dana Bartlett, Mr. Walter Macarthur, Dr. Philip King Brown, Mr. J. J. Bakewell, Jr.

5. Sociologic and Economic Conditions. Dr. George H. Kress, chairman, Mr. A. B. Nye, Mr. Frederick W. Dohrmann, Dr. John C. King, Mr. Thomas F. Griffen, Mrs. Robert O. Moody.

6. Legal Procedure. Dr. George H. Kress, chairman, Mr. Chas. A. Bliss, Dr. John L. Avey, Mr. A. E. Boynton, Mr. J. E. Gardner, Mr. W. A. Sutherland.

7. Scientific Problems. Dr. R. G. Brodrick, chairman, Dr. Frederick P. Gay, Dr. Wm.

Ophuls, Dr. F. M. Pottenger, Dr. C. M. Haring, Dr. Geo. H. Hart.

8. Educational Measures. Dr. R. G. Brodrick, chairman, Mr. Edward Hyatt, Rev. D. O. Crowley, Rev. Chas. F. Aked, Rabbi Martin A. Meyer, Mr. Frederick S. Withington.

9. Industrial and Commercial Problems. Mr. A. Bonnheim, chairman. Dr. Geo. C. Pardee, Dr. Geo. E. Tucker, Dr. Minerva Goodman, Mr. John I. Nolan, Mr. Chas. H. Bentley.

10. Registration and Disinfection. Mr. A. Bonnheim, chairman. Dr. Wm. C. Voorsanger, Mr. C. B. Boothe, Dr. H. N. Morrison, Mr. A. Caminetti, Mr. L. D. Bohnett.

Special Consultants and Auxiliary Workers.

In addition to these administrative boards constituting the officially appointed Commission, many persons have undertaken important special work in connection with the investigation. A large number of women's clubs, medical societies, labor associations and other organizations have appointed representatives to obtain accurate data on social and economic phases of the problem in various districts of California. A smaller number of experts in welfare organization work is volunteering a considerable amount of personal time for the study of special matters under consideration by the several committees.

Thus far two meetings of the Executive Board have been held at Sacramento, and this Board will be in session with the State Board of Health at this Del Monte meeting of the State Medical Society, and you are, each and all of you, cordially invited to present to the Commission or its members, any suggestions as to fields of investigation or methods of conducting the same which you may think desirable or needed.

During the last six months or so the statisticians of the State Tuberculosis Commission have been analyzing the tuberculosis mortality cards on file in the State Health Office at Sacramento, and already some most interesting facts have been brought out and charts and tables constructed.

We urge all of you who wish to know more of this work and who have not yet received a copy of the same, to write to the California State Board of Health for the special December California Tuberculosis Commission number of the Bulletin of the California State Board of Health, in which is presented by Dr. Snow and others an outline of some of the work already accomplished.

Time forbids at this meeting the discussion in detail of some of these interesting figures and investigations, but all who are interested will find an excellent presentation of some of them by Dr. Snow on pages 143 to 146 of the December, 1911, State Health Board Bulletin already referred to.

One thought which we wish to especially emphasize at this time is that every one of you is looked upon as an advisory and volunteer worker of the State Tuberculosis Commission, and we most earnestly urge each and all of you to co-operate to the fullest possible extent, in the effort now being made to secure mortality and morbidity

statistics in relation to tuberculosis and to elaborate more fully the sociologic and economic significance of these tuberculosis figures.

Once this information is at hand, we will have the premises upon which we can base our conclusions and our recommendations to the next legislature concerning the responsibilities of the legislature in the prevention and cure of tuberculosis as it exists in California.

At this time the Tuberculosis Commission has no settled conclusions as to what shall or shall not be recommended to the legislature, for until now we have been engaged in gathering the information from which intelligent recommendations must necessarily be made. Many of the facts needed are still lacking and for these we must depend largely upon the members of the medical profession. We beg of each of you, therefore, that you promptly seek and give to the Commission the information it needs, when you receive postcards and other requests from time to time in regard to present or former patients. If you each will do this, it will be possible to creditably fulfil the function for which the Commission was appointed. If you fail us in this, then the Commission and the State Health Board must likewise fail in its efforts in just that same proportion.

In conclusion, we again repeat that we urge each and all of you to communicate with the Commission or its members, either in writing or verbally, as regards any work you think should be undertaken or as to scope of work already started. In all this the State Health Board and the State Tuberculosis Commission feel they are your servants, and it is their desire to bring in a report that will be creditable to the medical profession and which will pave the way, in some measure, for a solution of this great tuberculosis problem of California, which grows more menacing as each year goes by.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of June, 1912, the following meetings were held by the San Francisco County Medical Society:

Section of Medicine, June 4, 1912.

1. Feeding in First Month of Life. Dr. Adelaide Brown.
2. The Principles Underlying the Feeding of Infants. Dr. Langley Porter.
3. Feeding in Later Infancy. Dr. H. H. Yerington. (To be published in Calif. State Journal.) Discussed by Drs. Sanford Blum, G. D. Culver, A. S. Keenan, Adelaide Brown, Langley Porter and H. H. Yerington.

Regular Meeting, June 11, 1912.

1. The Therapeutic Value of Injections of Deep Sea Water. Dr. F. C. Keck.

A summary of this paper having evidently been furnished the San Francisco Examiner by interested parties previous to the meeting, the Publication Committee of this Journal would refer its readers to the San Francisco Examiner of June 12, 1912.

Section on Surgery, June 18, 1912.

1. Presentation of Case of Skin Grafting: Transplanting of Flaps. Dr. George Rothganger.
2. A Recent Case of Lipectomy. Illustrated by lantern slides. Dr. H. Edward Castle. (To be published in Calif. State Journal.)

3. Prostatectomy in Man of 83 Years. Dr. H. B. A. Kugeler. (To be published in Calif. State Journal.)

Eye, Ear, Nose and Throat Section, June 25, 1912.

1. Exhibition of Case of Oxycephalus. (X-ray plates.)
2. Report of Case of Tuberculosis of Mastoid in Baby of 2 months and 10 days. Illustrated by microscopic slides.
3. Report of Case of Fistula of Temporal Bone. Dr. H. B. Graham.
4. Report of Case of Carcinoma and Sarcoma of Larynx.
5. Exhibition of Case of Laryngeal Sarcoma (?) Dr. A. S. Green.
6. Review of Some Recent Italian Literature. Dr. V. F. Luchetti.
7. A New Supplementary Method of Localizing Foreign Bodies in the Eye, with Review of Older Methods. Ferdinand Freytag, Ph. D. (To be published in Calif. State Journal.)

SOCIETY OF THE SAN FRANCISCO POLYCLINIC.

Wednesday, June 5, 1912. 8:30 p. m.

1. Report of Several Cases of Gassereotomy Accompanied by Demonstrations. Dr. J. Henry Barbat. Discussed by Drs. H. E. Castle and C. G. Levison.
2. Four Years of Clinical Study in Medical Tuberculosis. Dr. Philip King Brown.
3. The Palliative Treatment of Terminal Laryngeal Tuberculosis. Dr. Henry Horn. Presentation of Case. Discussed by Drs. H. S. Moore and J. J. Kingwell.
4. Spinal Curvature. Dr. J. T. Watkins. Discussed by Dr. G. J. McChesney.

Refreshments were served after the meeting.

BUTTE COUNTY.

The Butte County Medical Society held its meeting for June in Chico and had an unusually large attendance of guests from other counties. It was decided to raise funds by assessment for the purpose of prosecuting illegal practitioners.

The regular meeting of Butte County Medical Society was held Tuesday evening, June 11, at the dining-room of the Park Hotel. A "Dutch" supper was served after the meeting. The Society was represented by members from different parts of the county, two members coming from Orland, Glenn county. Those present were: Drs. J. H. M. Karsner and T. B. Rearden from Oroville; Dr. L. Q. Thompson of Gridley, Dr. S. Igllick and Dr. Samuel Goldman of Orland. Dr. Middleton Stansbury of Hamilton City and Drs. C. L. Browning, O. Stansbury, P. L. Hamilton, and Ella F. Gatchell of Chico. After the banquet, the time was devoted to discussion on different matters of business. Voted to add \$1.00 to present assessment to be used in prosecuting illegal practitioners. The matter of contract practice was discussed by the members. Voted to lay on table.

ELLA F. GATCHELL, Secretary.

NORTHERN DISTRICT SOCIETY.

The Northern District Medical Society, Dr. Peers, President, met at Colfax, June 11th, and had a very well attended meeting. A number of excellent papers were read and it is probable that some of them will appear later in the Journal.

ORANGE COUNTY.

The annual meeting of the Orange County Medical Society was held at the Anaheim Sanitarium in May. Dr. Ida B. Parker was elected President, Dr. John Wehrly, Secretary, and Dr. H. S. Gordon Treasurer. The meeting was largely in the nature of a social one and the banquet and speeches were enjoyed by the large number of members present.

POMONA VALLEY.

The charter members of the Pomona Valley Medical Society were given a delightful dinner at the bell club house, Pomona, on June 25th. The attendance was large and the program excellent.

RIVERSIDE COUNTY.

The annual meeting of the Riverside County Medical Society was held at the Victoria Club on June 10th, and about 50 members and guests attended.

SAN BERNARDINO COUNTY.

The San Bernardino and Riverside County Medical Societies were the guests of the Patton state hospital in May. The meeting was largely in the nature of a clinical one and was appreciated by all who attended. The meeting for July was devoted to public health matters and particularly to the question of clean dairies and certified milk. The society adopted resolutions supporting the health board and appealing to the council for more earnest support.

SONOMA COUNTY.

The June meeting of the Sonoma County Medical Society was held with Dr. I. A. Wheeler at Healdsburg. Dr. Wheeler read a very interesting paper, after which refreshments were served.

TULARE COUNTY.

The Tulare County Medical Society met in Tulare for the May meeting, in Lindsay for the June meeting and in Porterville for the July meeting. All of these meetings were well attended and subjects of general interest were discussed.

YOLO COUNTY.

The June meeting of the Yolo County Medical Society was held at the residence of Dr. F. R. Fairchild, a large attendance being present. Dr. Fairchild read a paper on the Open Treatment of Fractures with the Lane Splint; it was extensively discussed. After the business meeting, refreshments were served.

SOCIETY OF ANESTHETISTS.

On June 6th, at Atlantic City, during the meeting of the American Medical Association, and following a symposium on anesthesia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, Chairman of the Commission on Anesthesia of the A. M. A., occupying the chair, those assembled for the symposium acting as a committee of the whole, proceeded to organization and elected the following officers for the year 1912-1913:

President, James T. Gwathmey of New York.

Vice-Presidents—Charles K. Teter of Cleveland, F. H. McMeehan of Cincinnati, Yandel Henderson of New Haven.

Secretary, William C. Woolsey, 88 Lafayette avenue, Brooklyn.

Treasurer, Harold A. Sanders of Brooklyn.

The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied due of three dollars.

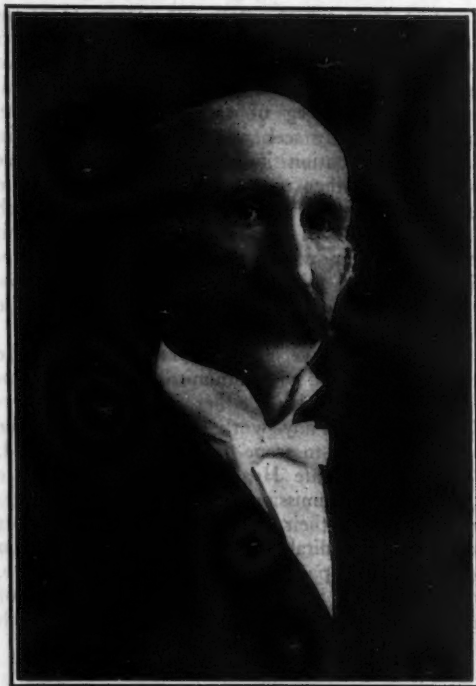
The National Society of Anesthetists in this notice, calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

WILLIAM C. WOOLSEY, Secretary.

WILLIAM L. MAUPIN, M. D.

Dr. Wm. L. Maupin was born in Columbia, Mo., April 17th, 1839. He was educated at William Jewel College in Liberty, Mo., and afterwards took up the study of medicine in Columbia, Mo.

At the first call of Governor Jackson for troops to enlist in defense of state rights, in 1861, he enlisted under Colonel Singleton and was shortly after transferred to General Price's command. After a few months of warfare, he was captured and taken prisoner. He was very ill while in prison, and for many weeks he was thought to be near death. When he was released from prison he returned to Columbia, and as soon as he recovered his health he resumed the study of medicine and



attended the course of lectures at the St. Louis Medical College. He graduated from Jefferson College in Philadelphia in the year 1867. He then returned to Columbia, Mo., where he practiced medicine and surgery for twenty-three years. He was a Democrat in his political views; a Baptist in his religious views, and an enthusiastic Mason. He was a cheerful promoter of every good thing that looked to the highest interest of humanity.

On account of failing health he moved to California in 1887 and settled in Fresno, where he soon became interested in everything that concerned the general good of the new western city. He died the 19th of June, 1911, at his home in Fresno. A long and useful life and a peaceful end.

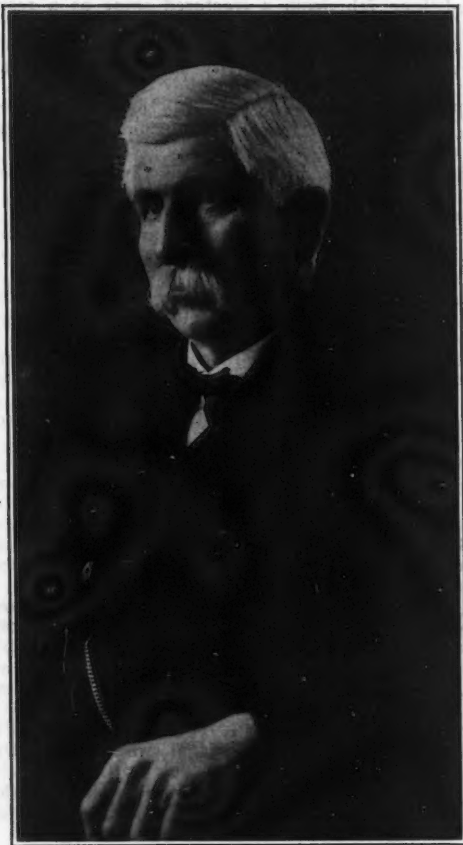
CHESTER ROWELL, M. D.

Dr. Chester Rowell was born in 1844 and died May 23rd, 1912. He graduated in medicine from the University of the Pacific in 1870 and settled in Fresno, where he practiced medicine up to the time of his death, at which time he was Mayor of Fresno. No more fitting or descriptive obituary could be written than that published in the Fresno Republican by J. W. Short, which, in part, here follows:

Our friend is dead. These words will be on the lips and in the hearts of many, many people in Fresno to-day. They are words often spoken of

one who has espoused a cause or rendered service to a people, but their meaning to-day will be different from the ordinary meaning. In the words we speak to-day is the feeling that comes to us when a hand that was always ready when we needed it is no longer within our grasp; when the busy hand that was extended to us all lies pulseless and inert. Whether we endure long or for a little time there are not many hands like it that we may clasp. It was the hand that gave and did not take. Not many hands are fashioned like that.

Thirty-one years ago this month I came to Fresno to set type for the Republican in the back room of a building where Goodman's store now stands. In the front room on the same floor of the old building was Doctor Rowell's office. It



was fitting that he should be there. Through its various changes and vicissitudes he was never far away from the Republican. It was a child of his adoption and nurture and always he rejoiced in its virtues and regretted its failings. I think in later years he had no deeper joy than the knowledge of the good it had accomplished.

The first time I saw Doctor Rowell he was standing by the desk in his office, engaged in a warm argument. The favorite theme of politics which the word argument suggests goes wide of the fact. The Doctor sometimes argued on other subjects.

"I know, Manuel," he was saying to the weather-stained and dilapidated foreigner who spoke brokenly but with Latin fervor for the affirmative. "I know I went to see you a good many times, and the wife and the babies, but it's all in the

day's work. Sometime when you get the mortgage off the land and the bills all paid you may give me something, but not now. You're not able to work much yet, and the wife and children will need more clothes this winter. No, sir, you can't give anything now."

Manuel raised his hands and voice again in hopeless protest, but the uplifted finger and decisive shake of the head which met his broken protest left no room for further argument, and he shuffled out the door and down the stairs. When he passed me there were tears in his eyes and on his face.

I did not know it then, but the incident had told me the history of Doctor Rowell's life. It was the history in point of time and labor of nearly forty years of busy life.

Columns could be written in illustration of the life and character of Doctor Rowell, but the facts are too well known, the remarkable personality is too familiar for such indulgence on my part. Doctor Rowell served faithfully the generation in which he lived. He helped those who were close at hand, not those who were far away. As a citizen he was alert and loyal. As a friend he was always ready to serve where service was most needed and never for reward. As a physician he lived the best standard of ethics, under the ideals of which must of necessity be an unselfish profession. He sought to alleviate, to help, not to gain reputation or fortune. No advertisements marked the way to his office, but no weary or afflicted ones sought in vain to find it. There were many to point the way.

And so there will be wider, truer sorrow in Fresno than if any other one had passed away. For he is gone who respected wealth but loved the poor, who admired success but helped those who failed, whose humanity was broad enough and heart large enough to reach us all.

EXPERT TESTIMONY.

Resolutions Regarding Expert Engineering or Technical Testimony Adopted by the Pacific Association of Consulting Engineers, December 1, 1911.

The Pacific Association of Consulting Engineers, organized in 1911 with headquarters in San Francisco, by engineers having membership in one or more national engineering societies, unanimously adopted the following resolutions. These resolutions have been sent to members of the judiciary and the legal profession, to engineers and to officers of medical societies who reside in the State of California. In all about 2500 copies of the resolutions have so far been distributed.

Replies received from judges, attorneys and physicians indicate a very strong probability that a bill or bills will be introduced at the next session of the California Legislature for the purpose of effecting some such reform as that suggested by our resolution.

It is, of course, apparent that whatever action is taken must affect the medical profession in relation to evidence just as much as it will affect engineering. The Board of Governors of the Pacific Association of Consulting Engineers has therefore been authorized by our membership to communicate with judges, lawyers, and physicians, and all other Californians interested, expressing the hope that some organized movement might be started, looking toward co-operation to bring about a wisely conceived legislation if on mature deliberation it should be found feasible at the present time. Engineers are aware that this subject has been receiving careful attention by lawyers and doctors, and would be pleased to join with them.

Resolution.

Whereas, This Association recognizes the serious objections inherent in, and views with disapproval, the prevailing method of procuring expert evidence

in cases at law in which engineers acting nominally as advisers of the court, are employed as witnesses and compensated by the respective litigants without the advice or co-operation of the court, being thus subject to partisan influence while in the discharge of non-partisan duty; and

Whereas, This Association is of the opinion that the usefulness of the engineer, both to courts and to litigants, in controversies requiring special engineering knowledge and experience, might be greatly extended and the ends of justice more fully conserved if a wiser order of procedure were instituted;

Resolved, That the officers of this Association be instructed to call, by formal communication, the provisions of our code of ethics bearing upon this subject to the attention of the judiciary of California, both State and Federal, and to the attention of the leading attorneys at law, either personally or through their bar associations, or both, with the request that they co-operate with this organization as opportunity offers in bringing about the changes desired.

The provision of the Code of Ethics referred to is as follows:

2. For the purpose of improving present court procedure in its relation to engineering practice, and for the purpose of increasing the efficiency of the engineering profession as an aid to the settlement of questions in controversy, this Association believes it desirable to restrict such engagements as soon as practicable to the following conditions:

- a. As a witness when appointed by and compensated through the agency of the court.
- b. As court commissioner, referee or other examiner, preferably sitting with an attorney, to take evidence involving engineering questions.
- c. As arbitrator appointed by either party to the controversy, or by both parties jointly, through the agency of the court or otherwise, and compensated by both parties conjointly.
- d. As special adviser to either contestant.

NEWS NOTES FROM NEWSPAPERS.

Merced has recently had a small epidemic of scarlet fever.

Dr. H. N. Rowell is a candidate for supervisor in Alameda county.

Dr. Chester Rowell of Fresno, left an estate valued at about \$250,000.

In San Francisco, Dr. A. P. O'Brien is once more on the Health Board.

Monterey Presidio is to have a new annex to its hospital costing about \$6000.

Stanford University Students' Guild is to have a new hospital costing about \$7000.

Dinuba has recently acquired a sanitarium, built and equipped by Mrs. W. D. George.

Stockton authorities recently convicted a Gypsy woman for illegally practicing medicine.

The Oregon, Washington and Idaho medical associations met in joint session July 6th at Portland.

Jeannette S. Allison, D. O., has been elected president of health board of Monrovia. Another straw.

Los Angeles is to have a new Children's Hospital. Plans have been drawn and work will begin at once.

At Colusa, two men were recently fined \$10 each for breaking quarantine; they were smallpox patients.

Fresno has been energetically at the "fly swatting" game. The Chamber of Commerce put up a \$10 prize.

The Santa Rosa Hospital is to be carried on by Mrs. E. E. Briggs, widow of the late Dr. Briggs of that place.

Dr. M. V. Silbermark, chief surgeon of the Austrian Red Cross, has been visiting various places in California.

The St. Helena Sanitarium has been sued for \$23,000 for burning a patient with hot bottles during an operation.

Dr. C. P. V. Watson of Los Angeles, was recently convicted of abortion and sentenced to three years in San Quentin.

Maricopa has passed a new city ordinance with the object of cleaning up the town and keeping it clean. Good luck.

The San Francisco Polyclinic has bought a lot on Jackson street near Polk and is to erect a new building for its clinics.

Smallpox keeps on its steady way. Two more cases have developed at Magalia, Butte county. But vaccination is a crime!

The wife of Dr. H. N. Barney of Richmond, died June 7th, from a fractured spine as a result of an automobile accident.

Redlands is to have a certified milk supply, largely through the activity of the San Bernardino County Medical Society.

Fresno County ranchers have been warned by the county health officer to muzzle or tie up all dogs during July and August.

Sacramento is prosecuting a Chinaman called Yung Wee Chun for advertising himself to be a physician when in fact he is not.

Sewage and garbage disposal are the problems which Dr. W. F. Snow, of the State Board of Health, has gone abroad to study.

Long Beach has organized a physicians' club with the object of promoting friendly relations between physicians. Good luck to it.

The new St. Mary's Hospital in San Francisco was dedicated in July. It is the testamentary gift of Mrs. Kate Johnson.

Hookworm has been found to exist in some of the truck farms of South San Francisco and a quarantine is to be asked against them.

Bubonic plague has appeared in Porto Rico and in Havana, Cuba. An appropriation of \$500,000 is asked of Congress to fight this invasion.

Stockton is to adopt medical inspection in its schools, if the supervisors carry out the expressed wishes of the board of education.

Placerville has been having a nice little row over the plans for the new El Dorado County Hospital; no fatalities have yet been reported.

Bakersfield is reported to have waked up and begun the process of house-cleaning. It was certainly needed, as the health authorities urged.

"It is a disgrace to any community to have a death from rabies," justly and wisely says Dr. Ewer in his bulletin to the people of Oakland.

Dr. E. E. Stone, formerly superintendent of the Napa asylum, has been acquitted of the charge of embezzling \$165 of the money of the State.

Dr. Frank Rattan of Martinez, Secretary of the Contra Costa County Society, has been quite seriously ill but we understand is improving.

Pasadena hospitals have come in for investigation under the eight-hour law and it is said that many violations of this law exist in other hospitals.

Los Angeles has a new infliction in the way of organized cranks; the California Anti-Vivisection Society has opened offices in the Queen City of the South.

Contra Costa county has been warned of the danger of rabies by a letter from the county health officer, Dr. S. G. Bransford, published in the local press.

Los Angeles had 1343 more births than deaths during the year ending June 30, 1912, but Dr. Powers thinks that several hundred more births were unreported.

In Stockton the senior class of the High School was recently given instruction on Municipal Hygiene by Dr. McGurk. A good example for other communities.

The American Federation of Sex Hygiene was incorporated on July 1st in New York. Dr. William F. Snow is given as one of the incorporators and directors.

In San Diego, Dr. A. D. Long has been appointed head of the health and development department of the Board of Education in place of Dr. F. J. Smith.

Stockton has completed and opened the new consumptive ward of the San Joaquin County Hospital. The building is quite up to date and cost about \$14,000.

Garage managers are responsible for the safe keeping of automobiles in their charge, according to a case recently decided in Oakland in favor of Dr. Eva L. Harris.

J. C. Bohannon, the cancer quack of Oakland, has been sued for \$5000 for crippling some fingers on the hand of one of his "patients." But the dear people do love quacks!

Health officers of the State will meet in Berkeley in September, according to the announcement sent out by Dr. Snow. Dr. W. A. Sawyer is in charge of the local arrangements.

Oakland has issued, through its Health Officer, Dr. Ewer, a bulletin on rabies for the education of its citizens. Let us hope they may "read, mark, learn and inwardly digest."

The tuberculin test for dairy herds was endorsed by the State Homeopathic Society at its last meeting in Sacramento. This society will hold its next meetings (1913) at Venice.

From San Francisco a dog was taken into Nevada. There it bit two boys and was found to have rabies. But let us not muzzle our dogs; it is quite unkind to their feelings.

Dr. George Converse, recently in charge of the Marine Hospital Service in San Francisco, has been appointed to take charge of the large sanitary work to be done at Iquitos, Peru.

Dr. J. A. McKee, of Sacramento, has announced that he is a candidate for the state senate. Dr. McKee served as senator from his district in the 36th and 37th sessions of the legislature.

Dr. Creighton Wellman, who lived in Oakland for awhile, a few years ago, and is now at Tulane University, has been giving a course of lectures on Hygiene at the University Summer School.

The California State Nurses' Association held its annual meeting in San Francisco toward the latter part of June, and it is said to have been one of the best meetings this association has held.

Dr. E. W. King, who was for eighteen years the superintendent of the Ukiah Insane Asylum, has resigned and located in San Francisco, where he is devoting himself to mental and nervous disorders.

In spite of attempts to secure a "safe and sane" Fourth, five boys were injured in San Francisco on that day. But the number of casualties throughout the State was much lower than in the previous noisy years.

A judgment in the sum of \$2500 was recently given against Dr. A. M. Stafford at Corona. Unfortunately for him, Dr. Stafford was not a member of the State Society and had to defend the case himself.

The right of the State University to exclude an un-vaccinated student has been upheld by the trial court. It is said the case will be appealed and the constitutionality of the law tested in the court of last resort.

The State Hygienic Laboratory is now preparing Pasteur treatment under the direction of Dr.

W. A. Sawyer. The laboratory has been inspected and approved by Dr. D. H. Currie of the Marine Hospital Service.

Oroville recently closed two houses in its tenement on account of smallpox. It is singular how a dreaded disease will "discover" such "houses" when the authorities in other circumstances do not know they exist!

"If the worthless doctors could be eliminated, and the competent doctors kept busy and properly paid, it would be a great thing for the profession as well as the public," says the Los Angeles Herald. Quite true—"if."

San Diego is promised a brand new industry; a factory to make instruments of "tempered gold" by a secret process. It seems an out-of-the-way place to put a factory. Let us hope it does not turn out to be a gold-brick factory.

Fresno is building a convention hall and numerous civic organizations have asked the city fathers that it be named Rowell Auditorium. The name of Chester Rowell should certainly be commemorated by Fresno in some fitting manner.

Dr. Arthur H. White has sued Dr. Philip King Brown, both of San Francisco, for \$100,000 for libel (or slander). Dr. Brown answered the suit by charging Dr. White with all sorts of shortcomings when he was warden at the City and County Hospital.

Los Angeles has been having a nice little rum-pus with its many freaks. They had a vote and turned down the proposition to require tuberculin-tested milch cattle. Then the cranks wanted to fire Dr. Powers, one of the best health officers in this country. But the Mayor would not stand for it.

Bakersfield has had a number of cases of typhoid and the health officer, together with the officers of the County Medical Society, have been appointed a committee to thoroughly investigate the matter. This is as it should be; what is a medical society for?

Napa city and county officials were recently addressed on the subject of public health measures by Dr. W. A. Sawyer. It would be well if the State Board of Health could arrange more of these official conferences between city and county officials and officers of the board.

California, says Dr. Snow, could build, man and maintain one battleship each year from the money saved if the same amount of business energy were applied to the tuberculosis problem that is being applied to the Panama-Pacific game. Perhaps it does not appeal to business men because there would not be so many banquets!

Alameda County citizens have just discovered that the county hospital and infirmary is a disgrace; a wagon shed was used to house sixteen patients. Probably these good citizens will try to blame this upon the medical profession, in some way; that is generally the case.

Los Angeles provided an all-day free picture show for the edification and instruction of its school children, in June, and it is said that thousands of children took advantage of the free show. The moving picture as an educational instrument is just beginning to be recognized.

Berkeley objects to the use of "A Primer of Sanitation," in its schools because it will educate the children to believe that germs exist and that serum therapy is the only salvation of the nation; these are also said to be the views of Berkeley's mayor. That's going some for a high-brow community!

San Diego is growing so fast that an up-town receiving hospital for the care of emergency cases is under consideration by the city fathers. The supervisors of San Diego have turned down the excellent suggestion of the County Medical So-

ciety to nominate the medical officials for the county hospital.

Dr. R. G. Broderick of San Francisco, delivered a public talk on tuberculosis in San Jose. There ought to be more of these public lectures on health matters in every community in the State. Let the people know the truth and then if they want to go on having needless diseases the responsibility is theirs.

"Nostrums and Quackery," a book that should be in the waiting room of every physician, was referred to in this Journal some time ago and the price was erroneously given as 50 cents. The price of the book is \$1, and it is cheap at that. Copies can be had by addressing the Association, 535 Dearborn avenue, Chicago, Ills.

Dr. O. D. Hamlin, President of the State Society, was injured in an accident in Chicago June 16th. A horse-cab ("one-cylinder hay burner"), ran away with him and got smashed; in the smash-up Dr. Hamlin's knee was injured, though not as seriously as at first reported. At the time of writing, Dr. Hamlin is once more out and around.

In Santa Ana a rather unusual suit has been brought against a firm of druggists by Dr. E. L. Enochs. He advertised in the local papers and, it is said, used some phrases which were objected to by the reputable physicians of the section. He also stated or intimated in his advertisements that the drug firm was vouching for him. They sent letters to the physicians thereabouts denying the inferred support and now Enochs has sued them for slander.

Outrageous officiousness caused the arrest of Dr. Oscar Mansfeldt, in San Francisco, early in July. Dr. A. H. Wright was accused in a dying statement of having performed an abortion on a Mrs. Brown. The patient called in Dr. Mansfeldt but he was unable to save her life; the police arrested him for failing to report a crime. The police seem to think the medical profession should be used as an aid to the detective bureau and that professional secrecy should not exist. They were obliged to release Dr. Mansfeldt.

REMEMBER!

Protection by the State Medical Society

PROTECTS!

Does An Insurance Policy Really Protect?

THINK IT OVER

BOOK REVIEWS

Nervous and Mental Diseases. By Church and Peterson. Published by W. B. Saunders Co., with 343 illustrations. Philadelphia, 1911.

This book has reached its seventh edition, showing a substantial and merited popularity. The book is well written and illustrated and takes up the various subjects in a clear and instructive manner. Many chapters have been largely rewritten and a goodly amount of recent work finds its way into the text. The important contribution of L. Newmark to the literature on the subject of Hereditary Spastic Paraplegia deserves more than the mere reference to the first article of several which have since appeared on this originally described form of familial diseases. W. F. B.

Manual of Diseases of the Eye, for Students and General Practitioners. By Charles H. May, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903, etc. Seventh edition, revised. With 362 original illustrations, including 22 plates, with 62 colored figures. New York, William Wood & Company, 1911. Price, \$2.00.

In presenting the seventh edition of this handy book, May has added a new chapter on the Ocular Manifestations of General Diseases, and also includes Trachoma Bodies, Lagrange's Operation for Glaucoma, the use of Salvarsan, Kronlein's Operation, and Injections of Tuberculin. As in previous editions, the text-book is well illustrated and the print is good; and as a one-volume treatise for students and general practitioners, can be recommended. W. S. F.

United States Bureau of Education. Bulletin 1912, No. 7. The Educational Status of Nursing, by M. Adelaide Nutting, Director of Nursing and Health, Teachers College, Columbia University, New York. Late Superintendent of Nurses and Principal of Training School, Johns Hopkins Hospital, Baltimore, Md.

This Bulletin should be carefully read by all authorities of Nurse Training Schools and especially by all people who in any way are connected with hospitals which have training schools. Miss Nutting has carefully analyzed tables that have been compiled by the Commissioner of the Bureau of Education. These tables show in tabular form the length of the course, the instruction given and other details of all the training schools for nurses in the United States. Miss Nutting's analysis goes into the matter very carefully and shows that although the standard of training schools has materially improved during recent years we still find many schools that are not worthy of the name and that the average school is far below what should be considered the ideal. She most clearly shows that there is need of regulation of training schools and that hospitals should not be permitted to graduate nurses unless they can offer them a real course of study. W. R. D.

Practical Medicine Series—1912. Vol. I, General Medicine. Billings & Salisbury.

In this volume the reviewer notes with regret that a certain definiteness, a certain ring of authority seems to be missing, as contrasted with the former volumes seen. This is especially noted in the remarks on Spengler's I. K. treatment for tuberculosis. On the other hand there are a number of valuable abstracts on arthritis, on the use of the electro-cardiograph, diet in diabetes, and diagnostic methods in tuberculosis. These latter are placed before the reader in a well digested

form and show careful editing. It may be that the literature in the last few months has been so voluminous that the editors have not been able successfully to cope with its bulk; still the reader who subscribes to this series does so with the idea of adding to his stock of knowledge of established facts and theories rather than further to confuse the great mass of conflicting opinions and evidence that bewilders the faithful reader of current medical literature. In brief, this last volume is at best a leaky filter for the stream of modern medical and near-medical thought; therefore its dependability as a source of clear and definite judgment is decidedly lacking.

G. H. T.

Laboratory Methods, With Special Reference to the Needs of General Practitioner. By B. G. R. Williams, M. D., and E. C. Williams, M. D. Published by C. V. Mosby Co., St. Louis, 1912. Price \$2.00.

The average "general practitioner who desires to make, easily and inexpensively, examinations on which he may depend," will find this book a most useful guide, not only in the country, but in the city as well. There are many men, fairly well trained, who never do any laboratory work, because, if we accept their excuses, (1) it is the work of specialists, (2) it is far too complicated and difficult, (3) it takes too much time, (4) it requires a well equipped and expensive laboratory. Reading this small book will convince these gentlemen of the weakness of their excuses. It will teach them a simple method, a reliable one at that, of doing every laboratory test commonly employed and of clinical value. It includes such chapters as "Essence of Tissue Diagnosis," "Detection of Common Poisons," "Milk and Its Home Modifications," "Technic of the Private Post-Mortem," etc. To the laboratory worker or the physician accustomed to complicated methods, bacteriological, chemical and pathological, acquired in recent courses as given in our best schools, this book has necessarily nothing to offer.

R. B.

The Parasitic Amoebae of Man. Charles F. Craig, M. D., Captain, Medical Corps, U. S. A. J. P. Lippincott Co. Philadelphia and London, 1911. Price \$2.50.

BOOKS

The literature bearing on the work of former investigators has been adequately reviewed by the author, and is accompanied by a quite complete number of references. His writings are simple and clear, and especially commendable for their exactness and detail. His chapter on "Technique," as well as his very complete description of the "Amoebae of the Intestinal Tract," are especially commendable; the illustrations are satisfactory. Doubt may be expressed by some equally experienced investigators as to whether our knowledge yet justifies such positive statements as to species, as his chapter on "Classification and Nomenclature" would imply. It would appear that more space has been devoted by the author to recording his disagreement with the opinions of other investigators than a work of this character would absolutely require. While apparently doubting, if not actually disbelieving the claim that parasitic amoebae can be cultivated, the author presents and discusses the works of other investigators, and in doing so apparently shows slight inconsistency by rejecting, in all parts of his book, the cultural claims of certain investigators, in part on morphological grounds, but in the same chapter "protest against the growing tendency of drawing conclusions regarding the morphology and life cycle of the parasitic amoebae as observed in man from organisms growing upon artificial culture media," for the reason that the "appearance of the amoebae in such cultures would probably be erroneous, as it is well known that the cultural forms of pro-

tozoa . . . differ markedly in their morphology and life history from the forms observed in the human host." From his own presentation of the evidence, it would appear that his conclusion, "The entire subject of the cultivation of the parasitic amoebae is in a chaotic condition," is entirely justified, but in the face of this opinion, the author himself appears to have drawn a more positive conclusion on the subject than the chaotic state of the evidence would justify. Taken as a whole, this work is an excellent contribution to the subject treated, and will be found invaluable to all persons interested in the amoebae.

D. H. C.

Principles and Practice of Physical Diagnosis. By John C. DaCosta, Jr. Second Edition. W. B. Saunders Co. Philadelphia and London, 1911.

This book might more properly be entitled "The Pathology and Diagnosis of the Diseases of the Heart and Lungs." After some 60 pages on general methods and technic, the bulk of the book is given up to the thorax and its viscera. This section is well written, concise and interesting as the author seems to be at home in his subject. There are several photographs of actual cases which well illustrate the first chapter.

The following short section on the abdomen is not in proportion to the rest of the book, and in subsequent editions it should be either strengthened or left out. For instance, pneumoconiosis is given three pages, almost entirely on the pathology, while on page 496, the x-ray examination of the stomach is dismissed with nine lines and a plate erroneously labeled "Hour-glass stomach." Now that we know the safety of the oxychloride and subcarbonate of bismuth it is surprising to see in a new book that we are to use "A pint of kefir, etc., with 1 oz. of 'bismuth' and that the mixture should be siphoned out after the examination so as to prevent toxic symptoms." The author is painfully not conversant with the great value of the six, twenty-four and forty-eight hour pictures in determining the motility of the stomach and intestines.

Although it may be true that "The average internist cannot hope, nor does he desire, to have more than a bowing acquaintance with x-ray technic," we believe that the younger men looking forward to a career in internal medicine will be greatly handicapped in later years if they do not now learn something of the technic of radiography as well as the interpretation of plates. If the author had been more conversant with the newer physiology and pathology of the stomach we might have been spared the surface topography diagrams on pp. 493 and 504. There we see the horizontal school-physiology stomach with the fundus covered by the ribs and the pylorus stuck over onto the tip of the eighth rib. The diagrams of gastrectasis, gastropnoia and hour glass stomach are rather amusing after the published work of Holzknecht, Groedel, Hertz and others.

The author is much given to remembering the names of the originators in medicine and this is a good book to turn to to find what is Brown's sign or Jones' point. It is rather amusing, however, to find Clado and Morris crowding McBurney off his point. They carefully start from different places but all arrive at about the same spot. A careful search of the literature would undoubtedly reveal more contestants. James Jackson, for instance, clearly described this point in 1855. (Letters to a Young Physician, p. 249.)

It would seem that we have enough good books of this type, of interest mainly to under-graduates, and what we now need in America are good monographs by masters in the different fields. Medicine has widened out so much and the advances are so rapid that one man cannot hope to write a book that will cover the whole field of diagnosis even, and with life in every section.

W. C. A.

Christ Among the Cattle. Frederic R. Marvin.
Boston. Sherman, French & Co. 1912.

Exercise and Health. Woods Hutchinson, M. D.
New York. Outing Publishing Co. 1911.

Outlines of General and Surgical Nursing. Winifred F. Lindsay, Superintendent of the Training School for Nurses of the Paradise Valley Sanitarium, National City, Cal. Loma Linda, Cal. The College Press.

REASONABLE PROTEST; HEED IT.

To the Editor of the State Journal: On behalf of those members of the medical profession who, like myself, are devoting themselves to laboratory work, I wish to present a protest against the practice prevailing among many physicians of sending their patients to purely commercial laboratories for various tests and examinations. No ethical physician sends his patient to an optician when he wishes him tested for glasses, nor does the eye-specialist refer his physically ill myopic to a druggist for advice or treatment to relieve his symptoms. Even the orthopedist usually takes the measurements of his patient's limb himself when about to order a brace or other purely mechanical apparatus to correct a deformity, instead of entrusting it entirely to the trained and thoroughly skilled mechanic who is to make the apparatus. Under no conditions does a physician, whatever his specialty may be, refer a case to "quacks" or laymen for physical examination or diagnosis. Why then should he send his patients to laymen for a diagnosis of anemia, tuberculosis, gonorrhea, syphilis, or any other condition in which a laboratory examination is necessary? True, in some instances a well-trained and conscientious layman can do this work very accurately, but in many cases, and especially in the complement fixation tests, only the medically trained expert can read and interpret his findings correctly, and render an accurate and helpful report to the physician caring for the case and depending on the test to assist him in the diagnosis or the regulation of the treatment. Two excuses are given by those who plead guilty to the habit of passing by their professional brethren and giving their work to those outside of medical circles. One is the lower rates charged by the non-professional worker; the other is the fear that those physicians who combine laboratory work with general practice might deliberately or unconsciously "steal" their patient from them. True, the commercial laboratories have instituted a scale of prices averaging about one-fifth of the usual professional rates, but is it fair or just that the well-to-do patient should get his work done at one-fifth of its value, and is not the professional laboratory expert just as willing to reduce his charge for a Wassermann test for a poor patient, at the request of the attending physician, as the surgeon is to do a \$500 operation for \$50, if that is all the low-salaried man with a family to support can possibly afford to pay for parting with his appendix? As to the other objection, the non-professional worker is quite likely to have some special favorite among the doctors to whom he will try to turn other physicians' patients if he finds he can do so without detection. Here the individual sense of honor is the controlling factor, not the fact that the laboratory worker is or is not a graduate of medicine.

In conclusion, let me remind my colleagues in the profession that now, as of old, the "laborer is worthy of his hire" and entreat them to give their professional brethren the preference over those who, because they have not spent so much time and money in preparation for their work, claim to be able to do it for all classes at such unfairly reduced charges.

A. W.

THE PHARMACIST AS THE PHYSICIAN'S MENTOR.

For some time past the National Association of Retail Druggists has been conducting a propaganda which had for its aim the replacement of proprietary preparations by preparations official in the United States Pharmacopoeia or the National Formulary. While the complex mixtures of the Pharmacopoeia and the Formulary are no more scientific than the proprietary preparations whose place they are recommended to take, they have it in their favor that their composition is known and that they are not advertised by extravagant claims that are liable to lead both physicians and the public to use them injudiciously.

While insofar the "U. S. P. and N. F. Propaganda" deserves our endorsement the recent attempt to "force them down our throats" by lectures on materia medica and therapeutics should not be countenanced. While it is true that the instruction in materia medica and therapeutics in medical colleges has not been all it should be, nevertheless it has not been of such inferior character as to warrant the pharmacist in setting himself up as the physician's mentor. The following protest is made by the Journal of the Indiana State Medical Association (June 15, 1912, p. 275), against an article in the N. A. R. D. Notes, April 4, 1912, which attempts to popularize Elixir Corydalis Compound, an obsolete shot-gun formula of the N. F.: This is an aromatic elixir containing turkey corn, stillingia, prickly ash, blue flag, and potassium iodid. It is claimed that the activity of each of these drugs is increased and the value of the elixir greatly enhanced, through being thus combined. With the assurance of matured wisdom this drug journal tells us:

"It is an efficient alternative of great value in favorably modifying the general morbid processes of certain constitutional diseases. Physicians ought to thoroughly acquaint themselves with this preparation for it is a remedy par excellence.

"Its laxative properties, if not sufficient, may be enhanced by the addition of Cascara Sagrada or Podophyllin.

"This preparation has a decided tonic action in the third stage of syphilis, in chronic rheumatism, and is distinctly stimulating to the intestinal glands."

The spirit of perversity impels us to ask: How does this self-constituted instructor know these things? In these days when all statements are being put to the test and the opinions, which attributed the mysterious power of alternatives to such remedies as sarsaparilla, are dissolving like mist before the morning sun, it becomes the druggist to wait patiently for further knowledge rather than to confuse the issue by raising the old war cry. How happens it that the N. A. R. D. can tell us so confidently what years of investigation have not disclosed? The trained pharmacologist cannot discover the alternative or tonic properties of corydalis, or stillingia, prickly ash or blue flag. What does the retail druggist know about them that he should vaunt this mixture of cast-off herbs as "a remedy par excellence"? Who is the physician so ignorant as not to know that he can supplement laxative action by another laxative if he wishes? Or was this lesson written at space rates and this statement thrown in to fill up?

But we forget the potassium iodid. Of course, the physician sometimes forgets potassium iodid to the great detriment of his patient. In the great emergencies when drugs must be used with a bold hand what is so likely to lead to failure as the fact that this life-saving agent is concealed in a mixture of worthless adjuvants? The doctor forgets what it is that will cure the disease because of the claims made for the other wonderful alternatives.

And now let us ask why all this laudation of a formula, the ingredients of which have been tried

and found wanting? The answer readily occurs. Dollars and cents. Easy money. Were it not for support from trade interests such preparations as Elixir Corydalis Compound would sink from the weight of their own worthlessness into that limbo where repose such ancient and once honored remedies as the blood of the black cat, skunk's oil and the mold from worm-eaten skulls.

It is time to face the facts. The medical profession as represented by the American Medical Association with its ideals of public service, its ethical principles as to the exploitation of remedies, its progressive program in therapeutics, as voiced by the Council on Pharmacy and Chemistry stands on another plane from that occupied by trade organizations whose sole object is to advance the economic interests of their members. Unfortunately the drug business is a trade and a part of that commercial world whose warring interests necessitate that everything shall bow to so-called business principles. When the American Pharmaceutical Association provided us with the National Formulary, it did a meritorious act, and we physicians may gladly employ some of its formulas; but when the N. A. R. D. assumes to instruct the doctors which formulas they shall use and how they shall use them, it becomes an impertinence not to be tolerated.

It should be remembered that it is the druggist's interest to sell as many drugs as possible; it is the doctor's duty as well as his interest to cure his patient whether the drugs used be few or many. The trade has its rights as long as it keeps its place but in the struggle between various economic interests it should be kept in mind that the place of the doctor is on the side of the suffering public and of the individual patient who is his employer.

TAKA-DIASTASE AGAIN FOUND WANTING.

While Parke, Davis & Company's Taka-Diastase preparations were at one time described in New and Non-official Remedies, the Council on Pharmacy and Chemistry reconsidered the acceptance of these preparations some three years ago, because the specimens as found on the market did not have the properties claimed for them. Evidently considering that three years time was ample to permit the exploiters to improve their products so as to make them comply with the claims made or else to modify these claims to agree with the products offered for sale, the Council again purchased specimens of Taka-Diastase and Liquid Taka-Diastase on the open market and determined their starch converting power. From the report (Jour. A. M. A., July 6, 1912, p. 50), of the Council it is seen that Parke, Davis & Company still make exaggerated claims for the amylolytic power of their digestants and that the firm proposes to continue these unwarranted and misleading claims in spite of the comprehensive chemical examination and the opinion of a special referee, a member of the Council's staff of clinical consultants, which were presented to the firm.

Coming from a firm which, in the past, has laid much emphasis on the reliability of its products, this decision to sell some of its preparations under claims which are plainly misleading, is difficult to understand.

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Proferrin is a compound of iron and milk casein. It is tasteless, insoluble in water and dilute acids, slowly soluble in alkalis. It is used as a ferruginous tonic. It undergoes very little change in the stomach but is said to be quickly digested and absorbed in the intestine. Its hematogenous

actions resemble those of other organic iron preparations. Dose, .13 to 3 Gm. (2 to 5 grains). It is also marketed in the form of tablets, each containing, respectively, 0.065 Gm. (1 grain), 0.15 Gm. (2½ grains) and 0.3 Gm. (5 grains). H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., May 4, 1912, p. 1356).

Tyramine is para-hydroxy-phenyl-ethyl-amine hydrochloride OH. $C_6H_4.CH_2.CH_2.NH_2.HCl$, the hydrochloride of synthetically prepared para-hydroxy-phenyl-ethyl-amine. Taken internally or injected subcutaneously tyramine increases the blood pressure; it is also claimed to be valuable for producing post-partum contraction of the uterus. The action is similar to epinephrine, being weaker and slower, but lasting longer. It is marketed in the form of hypodermic tablets (Tabloid Tyramine Hypodermic) each containing 0.02 Gm. (1-3 grain), Burroughs Wellcome & Co., New York (Jour. A. M. A., May 4, 1912, p. 1356).

Tuberculin-Rosenbach is an "old tuberculin" modified by growing in a culture with *Trichophyton holosericum* album. It is claimed to be less toxic but more efficient than other forms of tuberculin. The validity of these claims is not fully confirmed. Kalle & Co. New York (Jour. A. M. A., May 4, 1912, p. 1356).

Cresatin is a meta-cresyl, acetate, $CH_3.C_6H_4.O(CH_3.CO)$, the acetic acid ester of meta-cresol. It is said to be antiseptic and analgesic and is recommended for use in the treatment of affections of the nose, throat and ear, such as follicular tonsillitis, nasal suppuration due to ethmoidal diseases, atrophic nasopharyngeal catarrhs, furunculosis of the external auditory canal and purulent otitis media. Schieffelin & Co., New York (Jour. A. M. A., May 25, 1912, p. 1582).

Pharmaceutical preparations of accepted articles:

Novocain Tablets "D" each containing novocain 0.2 Gm (3 grains).

Novocain Tablets "F" each containing novocain 0.05 Gm. (¾ grain).

Novocain Suprarenin Tablets "A" each containing novocain 0.125 Gm. (2 grains), and suprarenin 0.000125 Gm. (1/500 grain).

Novocain Suprarenin Tablets "B" each containing novocain .1 Gm. (1½ grain), and suprarenin 0.00025 Gm. (1/250 grain).

Novocain Suprarenin Tablets "C" each containing novocain 0.1 Gm. (1½ grain), and suprarenin 0.000083 Gm. (1/1000 grain).

Novocain Suprarenin Tablets "E" each containing novocain 0.02 Gm. (1/3 grain), and suprarenin 0.00005 Gm. (1/1200 grain) (Jour. A. M. A., May 4, 1912, p. 1356).

Cholera Bacteria, Mulford is designed for the purpose of immunizing against cholera and contains killed cholera vibrios. H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 1, 1912, p. 1685).

Typho-Basterin, Mixed, Mulford, is a typhoid vaccine containing killed *Bacillus typhosus* and *Bacillus paratyphosus* A and B. H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 1, 1912, p. 1685).

Bismuth Beta-Naphtholate (Bismuthi Betanaphtholas) is a bismuth salt of beta-naphthol. It is a brownish or grayish powder without odor, almost tasteless and insoluble in water. It is decomposed into its constituents in the intestines and hence is used in catarrhal and fermentative gastro-enteric disorders, such as gastritis, dysentery, diarrhea, etc. Dose, for children, 0.1 to 0.3 gm (1½ to 5 grains) and for adults, 1.5 to 5 gm. (22 to 75 grains) daily.

Bismuth Beta-Naphtholate, Mulford complies with the description given above. It is also marketed in the form of tablets each containing 0.3 gm. (5 grains). H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 15, 1912, p. 1857).

CHANGES OF ADDRESSES.

Cluness, W. R., from 406 Sutter St., to 900 Union St., Alameda, Cal.
Shaffer, C. P., from Reedley to Alhambra, Cal.
Tillotson, C. A., from Coalinga to New York.
Stevens, Burt S., from Woodland to San Francisco, Cal.
Dunn, R. H., from 2122 Market St., San Francisco, to No. 3 City Hall Ave., San Francisco, Cal.
Carter, R. S., from 832 5th St., San Diego to Timken Bldg., San Diego, Cal.
De Lucis, C. A., from 444 Montgomery Ave., San Francisco to 1703 Powell St., San Francisco, Cal.
Brusco, H. D., from 916 Kearny St., San Francisco to 583 Green St., San Francisco, Cal.
Tausig, E., from 916 Kearny St., San Francisco to 346 Montgomery Ave., San Francisco, Cal.
Day-Bew L., from 1895 Sutter St., San Francisco to Los Gatos, Cal.
Spalding, A. B., from 240 Stockton St., San Francisco to Lane Hospital, San Francisco, Cal.
Kurtz, Joseph, from Douglas Bldg., Los Angeles to 1801 Toberman St., Los Angeles, Cal.
Nuckolls, W. L., from Kingsburg to San Francisco, Cal.
Blumenberg, S. P., from 362 Kearny St., San Francisco to 1112 Market St., San Francisco, Cal.
Von Werthern, H. L., from San Francisco to Tulare, Cal.
Blake C. R., from Bank Bldg., Richmond to Pillow Bldg., Richmond, Cal.
Caesar, Wm. J., from Boulder Creek to Pillow Bldg., Richmond, Cal.
Burbank, H. E., from address unknown to Oakdale, Cal.
Cook, Wm. H., from McKittrick to Hot Springs, Cal.
Toland, M. R., from Los Angeles to Pomona, Cal.
Lavenson, R. S., from Title Ins. Bldg., Los Angeles to Bradbury Bldg., Los Angeles, Cal.
Hadley, F. H., from Los Angeles to Grant Bldg., San Francisco, Cal.
Howard, E. S., from 960 Steiner St., San Francisco to 2161 Sutter St., San Francisco, Cal.
Eastman, M. E., from Alturas to New Pine Creek, Cal.
MacFarlane, N., from 5334 S. Park, Los Angeles to American Bank Bldg., Los Angeles, Cal.
Savage, Wm. W., from address unknown to Fresno, Cal.
Skoonberg, A. E., from Haight and Fillmore Sts., San Francisco to Koenig Bldg., San Francisco, Cal.
Bennett, Laura, from Pacific Elec. Bldg., Los Angeles to Box 397, San Pedro, Cal.
Beck, J. E., from Tulare to Modesto, Cal.
Phelan, H. du R., from Honolulu to Fort Barry (Marin Co.), Cal.
Mahan, Eugene F., from 1041½ Castro St., San Francisco to Pacific Bldg., San Francisco, Cal.
Fuller, L. H., from address unknown, to 623 West Fifth St., Los Angeles.
Hunt, D. W., from 446 Belmont St., Glendale, to 442 Belmont St., Glendale.
Mitchell, F. W., from Brower Bldg., Bakersfield, to Producers' Bank Bldg., Bakersfield.
Guinan, Edw. R., from 2257 2d St., San Francisco to —?
Cutter, J. B., from Los Angeles, to Watsonville.
Jones, C. P., from Grass Valley, to Europe.
Walsh, Jos. F., from San Francisco, to Grass Valley, Cal.
Hollister, J. C., from Los Angeles, to Altadena.
McRae, D. M., from Oakland, to Veterans' Home, Napa, Cal.

Jacobs, Jay, from San Francisco, to Winters, Cal.
Galehouse, F. C., from San Francisco, to San Rafael.
Carmichael, M. F., from Oakland, to Children's Hospital, San Francisco.
Bixby, W. E., from Cowell to —?
Best, E. J., from University Hospital, San Francisco, to 240 Stockton St., San Francisco.
Thompson, C. P., from 305 6th Ave., San Francisco, to 2304 Clement St., San Francisco.
Bullard, Chas. Treat, from Los Angeles, to Hume (Fresno Co.).
Bradfield, G. M., from City and County Hospital, San Francisco, to 416 Hayes St., San Francisco.
Frery, L. A., from Cloverdale, to Shaver, Cal.
Rea, R. R., from Chamber of Commerce Building, Los Angeles, to San Fernando Building, Los Angeles.
Martindale, John H., from Birche, Maine, to California Club, Los Angeles.
Bassett, F. W., from Lissner Building, Los Angeles, to I. W. Hellman Bldg., Los Angeles.
Fisher, Mary E., from address unknown, to 460 56th St., Oakland, Cal.
Gaynor, J. J., from address unknown, to Hotel Harcourt, San Francisco.
Walker, Agnes, from Hotel Normandie, to 350 Post St., San Francisco.
Wigand, T., from 4th Ave. and Clement St., San Francisco, to 1320 24th St., San Francisco.
Michelson, Lewis, from 2735 Webster St., San Francisco, to 209 Post St., San Francisco.
Stone, E. E., from 1190 Pine St., San Francisco, to 3284 Jackson St., San Francisco.
Wilcox, G. B., from German Hospital, San Francisco, to 1751 Market St., San Francisco.
Blackmun, E. L., from 531 E. Main St., Stockton, Cal., to Ruhl Bldg., Stockton, Cal.
Gedney, F. M., from Hobart Mills, to 3013 Fillmore St., San Francisco.
Leonard, I. V., from 2370 Mission St., San Francisco, to 999 Sutter St., San Francisco.
Arnold, Chas. S., from Central Bank Bldg., Oakland, to Oakland Bank of Savings Bldg., Oakland, Cal.
Leonard, Ethel L., from Consolidated Realty Bldg., Los Angeles, to California Bldg., Los Angeles.
Hill, R. C., from 660 Market St., to 133 Geary St., San Francisco.
McNulty, A. H., from Examiner Bldg., to Phelan Bldg., San Francisco.
Trevelyan, G. H., from Arlington to —?
Crance, C. C., from 2161 Sutter St., San Francisco, to 1155 Bush St., San Francisco.

NEW MEMBERS.

Greenwood, Earl N., San Francisco, Cal.
Thompson, C. P., San Francisco, Cal.
Kilgore, E. S., Berkeley, Cal.
Tower, F. J., Pasadena, Cal.
Pritchard, Frank H., Colton, Cal.
Hieronvmus, A., Alameda, Cal.
Kierluff, H. N., San Quentin, Cal.

RESIGNED.

Davidson, Thomas, Los Angeles, Cal.
Hunt, D. W., Glendale, Cal.
Galehouse, F. C., San Rafael, Cal.
Cleary, George, Petaluma, Cal.

DEATHS.

Fife, John, Red Bluff, Cal.
Rowley, Milton M., Berkeley, Cal.